THE PALESTINE EXPLORATION FUND.

NOTES AND NEWS.

The Committee of the Palestine Exploration Fund have much pleasure in announcing to subscribers and friends that they have obtained a firman granting permission to excavate at Khŭrbet 'Ajlân, the EGLON of Joshua. It is understood that all objects, except duplicates, found in the course of the excavations shall be forwarded to the Museum at Constantinople, but that the Committee's agents shall have the right of making squeezes, sketches, models, photographs, and copies of all such objects. The Committee have been so fortunate as to secure the services of Mr. Flinders Petrie, who is now in Syria making arrangements to start the excavations.

The Committee will be most grateful to subscribers who wish to contribute towards this Fund to send in their donations as early as possible.

For a long time it has been desired by the Committee to present to the world some of the great hoards of information about Palestine which lie buried in the Arabic texts of the Moslem geographers and travellers of the Middle Ages. Some few of the works, or parts of the works, have been already translated into Latin, French, and German. Hardly anything has been done with them in English, and no attempt has ever been made to systematise, compare, and annotate them.

This has been done for the Society by Mr. Guy le Strange in the book "Palestine under the Moslems," just prepared and this day issued. The work is divided into chapters on Syria, Palestine, Jerusalem, and Damascus, the provincial capitols and chief towns, and the legends related by the writers consulted. These writers begin with the ninth century and continue until the fifteenth. Such illustrations as may be required for the elucidation of the text are presented with the volume.

The Committee are in great confidence that this work—so novel, so useful to students of mediæval history, and to all those interested in the continuous story of the Holy Land—will meet with the success which its learned author deserves. The price to subscribers to the Fund will be 8*s.* 6*d.*; to the public, 12*s.* 6*d.*

Dr. Torrance, of Tiberias, has explored to some extent the caves behind that city, and succeeded in penetrating several hundred feet into the interior of one of them, but without finding much. The Talmud speaks of these caves, and states that they extended as far as Sepphoris (Seffûrieh), which is eighteen miles distant!

BALANCE SHEET FOR THE YEAR ENDING 31st DECEMBER, 1889.

Receipts.	£	s.	d.	Expenditure.	£	s.	d.
January 1, 1889—							
To Balance	402	9	0	By Printing and Binding	920	18	3
December 31, 1889—				Maps, Illustrations, and Photographs..	462	12	11
Donations, Subscriptions, and Lectures ..	1,521	9	0	Exploration.. ..	163	3	0
Maps, Memoirs, and Books	988	3	2	Stationery, Advertising, and Sundries	112	17	10
Photographs	37	16	11	Postage, Parcels, including the *Quarterly Statement* ..	113	7	4
				Salaries and Wages	280	12	4
				Rent..	121	0	0
				Loan paid off ..	400	0	0
				Balance in Bank, 31st December, 1889 ..	375	6	5
	£2,949	18	1		£2,949	18	1

W. Morrison,
Treasurer.

TREASURER'S STATEMENT.

This year, like the last, has been one mainly of printing and of publishing results. Thus the expenses of publishing amount to £1,383 11*s.* 2*d.*, against which must be set £1,026 0*s.* 1*d.* produced by sales. Considering that the *Quarterly Statement*, which costs about £500, is given away to subscribers to the Fund, and that great liberality is observed in the allowance to subscribers on the books, these figures show very good results. The amount set down as received, it must be observed, does not include advertising the books or the publisher's commission, but shows the net results.

Management shows a pretty constant expenditure of £627. New exploration only required £163 last year. As the Committee are at the present moment organising new work, it will be very much heavier next year. The debt of £450, which appeared in my last Statement (*Quarterly Statement*, April, 1889) is now paid off, leaving only a small sum due for interest. The only liabilities of the Society are certain current printers' and engravers' accounts.

The position of the Society, if we enumerate its books, with copyrights and stock of books, its collections, and its maps, is perfectly sound and solvent.

In other words, out of a total expenditure of £2,175 the proportion is as follows:—

Publishing	·64.
Excavations	·07.
Postage	·05.
Management	·24.

Walter Morrison, *Treasurer.*

A Society of German Roman Catholics has purchased property at Khan Minyeh, and is erecting buildings there.

A report from Herr Schick respecting the Greek inscription found north of Damascus Gate, alluded to in the last *Quarterly Statement*, page 3, will be found on page 69, together with (reduced) copy of the inscription itself.

The essay on Ma'lula, by F. J. Bliss, Esq., B.A., of Beyrût, is printed in the current number, and also an important paper by the Rev. G. Post, M.D., on the sects and nationalities of Syria and Palestine.

A letter has been received from the Rev. Gordon C. Grist of Frome, objecting to the translations given by Major Conder and Professor Sayce of the Greek inscription on page 183 of last year's *Quarterly Statement*. The Rev. Mr. Grist thinks the true rendering should be "Christ, remember the slave Susanna," or possibly, "Christ, remember Thy servant Zanna."

Mr. Henry A. Harper's work, on "The Bible and Modern Discoveries" was published in December. It is an endeavour to present in a simple but yet connected form the Biblical results of twenty-two years' work of the Palestine Exploration Fund. The writer has also availed himself of the discoveries made by the American Expeditions and the Egyptian Exploration Fund, as well as discoveries of interest made by independent travellers. The Bible story, from the call of Abraham to the Captivity, is taken, and details given of the light thrown by modern research on the sacred annals. Eastern customs and modes of thought are explained whenever the writer thought they illustrated the text. To the Clergy and Sunday School Teachers, as well as to all those who love the Bible, the writer hopes this work will prove useful. He is personally acquainted with the land, and nearly all the places spoken of he has visited, and most of them he has moreover sketched or painted. The work is in one large, handsome volume of 600 pages. It is illustrated with many plates, and a map showing the route of the Israelites and the sites of the principal places mentioned in the sacred narratives. Price to the public, 16*s.*; to subscribers to the Palestine Exploration Fund, 10*s.* 6*d.*, carriage included.

The work has had a very gratifying reception. The whole of the First and Second Editions are gone, and a Third Revised Edition is now ready. It should be noted that the book is admirably adapted for the school or village library.

The report of Herr Schumacher's Survey of Northern 'Ajlûn is now ready. It contains a map, plans and drawings of the important ruins of Gadara (Umm Keis), Capitolias (Beit Ras), and Arbela (Irbid), none of which had ever before been surveyed, also of the Temple at el-Kabu and numerous tombs, sarcophagi, inscriptions, dolmens, &c. The price to the public will be 3*s.* 6*d.*, to subscribers to the Fund, 1*s.* 6*d.*

A special case (1*s.* each.) is being prepared for binding "'Ajlûn," "Abila," and "Pella" in one volume.

The first volume of the "Survey of Eastern Palestine," by Major Conder, has been issued to subscribers. It is accompanied by a map of the portion of country surveyed, special plans, and upwards of 350 drawings of ruins, tombs, dolmens, stone circles, inscriptions, &c. The edition is limited to 500. The first 250 subscribers pay seven guineas for the three volumes; subscribers to the "Survey of Western Palestine" are privileged to have the volumes for this sum. The price will be raised, after 250 names are received, to twelve guineas. The Committee *are pledged never to let any copies be subscribed under the sum of seven guineas.* Mr. A. P. Watt, 2, Paternoster Square, is the Sole Agent. The attention of intending subscribers is directed to the announcement on the inside of the cover of this number.

Considerable progress has also been made with the second volume, which consists of M. Lecomte's beautiful drawings, illustrating the Mission of M. Clermont-Ganneau in 1874. The illustrations for the third volume, Mr. Chichester Hart's "Flora and Fauna" of the Wâdy Arabah, are nearly ready.

The Committee have added to their list of publications the new edition of the "History of Jerusalem," by Walter Besant and E. H. Palmer (Bentley & Son). It can be obtained by subscribers, carriage paid, for 5*s.* 6*d.*, by application to the Head Office only. The "History of Jerusalem," which was originally published in 1871, and has long been completely out of print, covers a period and is compiled from materials not included in any other work, though some of the contents have been plundered by later works on the same subject. It begins with the siege by Titus and continues to the fourteenth century, including the Early Christian period, the Moslem invasion, the Mediæval pilgrims, the Mohammedan pilgrims, the Crusades, the Latin Kingdom, the victorious career of Saladin, the Crusade of Children, and many other little-known episodes in the history of the city and the country.

The books now contained in the Society's publications comprise an amount of information on Palestine, and on the researches conducted in the country, which can be found in no other publications. It must never be forgotten that

no single traveller, however well equipped by previous knowledge, can compete with a scientific body of explorers, instructed in the periods required, and provided with all the instruments necessary for carrying out their work. The books are the following (*the whole set can be obtained by application to Mr. George Armstrong, for £2, carriage paid to any part in the United Kingdom only*) :—

By Major Conder, R.E.—

(1) "Tent Work in Palestine."—A popular account of the survey of Western Palestine, freely illustrated by drawings made by the author himself. This is not a dry record of the sepulchres, or a descriptive catalogue of ruins, springs, and valleys, but a continuous narrative full of observations upon the manners and customs of the people, the Biblical associations of the sites, the Holy City and its memories, and is based upon a six years' experience in the country itself. No other modern traveller has enjoyed the same advantages as Major Conder, or has used his opportunities to better purpose.

(2) "Heth and Moab."—Under this title Major Conder provides a narrative, as bright and as full of interest as "Tent Work," of the expedition for the *Survey of Eastern Palestine*. How the party began by a flying visit to North Syria, in order to discover the Holy City—Kadesh—of the children of Heth; how they fared across the Jordan, and what discoveries they made there, will be found in this volume.

(3) Major Conder's "Syrian Stone Lore."—This volume, the least known of Major Conder's works, is, perhaps, the most valuable. It attempts a task never before approached—the reconstruction of Palestine from its monuments. It shows what we should know of Syria if there were no Bible, and it illustrates the Bible from the monuments.

(4) Major Conder's "Altaic Inscriptions."—This book is an attempt to read the Hittite Inscriptions. The author has seen no reason to change his views since the publication of the work.

(5) Professor Hull's "Mount Seir."—This is a popular account of the Geological Expedition conducted by Professor Hull for the Committee of the Palestine Fund. The part which deals with the Valley of Arabah will be found entirely new and interesting.

(6) Herr Schumacher's "Across the Jordan."

(7) Herr Schumacher's "Jaulân."—These two books must be taken in continuation of Major Conder's works issued as instalments of the unpublished "Survey of Eastern Palestine." They are full of drawings, sketches, and plans, and contain many valuable remarks upon manners and customs.

(8) "The Memoirs of Twenty-one Years' Work."—This work is a popular account of the researches conducted by the Society during the past

twenty-one years of its existence. It will be found not only valuable in itself as an interesting work, but also as a book of reference, and especially useful in order to show what has been doing, and is still doing, by this Society.

(9) Herr Schumacher's "Kh. Fahil." The ancient Pella, the first retreat of the Christians; with map and illustrations.

(10) Names and Places in the Old and New Testament and Apocrypha, with their modern identifications, with reference to Josephus, the Memoirs, and *Quarterly Statements*.

(11) Besant and Palmer's "History of Jerusalem," already described.

(12) Northern 'Ajlûn "Within the Decapolis," by Herr Schumacher.

Branch Associations of the Bible Society, all Sunday School unions within the Sunday School Institute, the Sunday School Union, and the Wesleyan Sunday School Institute, will please observe that by a special Resolution of the Committee they will henceforth be treated as subscribers and be allowed to purchase the books and maps (by application only to the Secretary) at reduced price.

The income of the Society, from December 19th to March 19th inclusive, was—from annual subscriptions and donations, £755 3*s*. 8*d*.; from donations for excavations, £932 8*s*. 6*d*.; from all sources, £1,983 17*s* 2*d*. The expenditure during the same period was £1,132 19*s*. 8*d*. On March 20th, the balance in the Bank was £1,195 7*s*. 7*d*.

Subscribers are begged to note that the following can be had by application to the office, at 1*s*. each:—

1. Index to the *Quarterly Statement*, 1869–1880;
2. Cases for Herr Schumacher's "Jaulân;"
3. Cases for the *Quarterly Statement*, in green or chocolate.
4. Cases for "Abila," "Pella," and "'Ajlûn" in one volume.

Early numbers of the *Quarterly Statement* are very rare. In order to make up complete sets, the Committee will be very glad to receive any of the following numbers:—

No. II, 1869; No. VII, 1870; No. III (July) 1871; January and April, 1872; January, 1883, and January, 1886.

It having again been reported to the Committee that certain book hawkers are representing themselves as agents of the Society, the Committee have to caution subscribers and the public that they have no book hawkers in their employ, and that none of their works are sold by itinerant agents.

While desiring to give every publicity to proposed identifications and other theories advanced by officers of the Fund and contributors to the pages of the *Quarterly Statement*, the Committee wish it to be distinctly understood that by publishing them in the *Quarterly Statement* they neither sanction nor adopt them.

Subscribers who do not receive the *Quarterly Statement* regularly are asked to send a note to the Secretary. Great care is taken to forward each number to all who are entitled to receive it, but changes of address and other causes give rise occasionally to omissions.

The only authorised lecturers for the Society are—

(1) Mr. George St. Clair, F.G.S., Member of the Anthropological Institute and of the Society of Biblical Archæology.

His subjects are:—

(1) *The Buried City of Jerusalem, and General Exploration of Palestine.*
(2) *Discoveries in Assyria, Chaldea, and Palestine.*
(3) *The Moabite Stone and the Pedigree of the English Alphabet.*
(4) *Jerusalem of David, Nehemiah, and Christ.*
(5) *Sight-seeing in Palestine: a Narrative of Personal Experiences.*
(6) *Israel's Wars and Worship, illustrated by the new Survey.*
(7) *The Gospel History in the light of Palestine Exploration.*

Address: Geo. St. Clair, Bristol Road, Birmingham, or at the Office of the Fund.

(2) The Rev. Henry Geary, Vicar of St. Thomas's, Portman Square. His lectures are on the following subjects, and all illustrated by original photographs shown as "dissolving views:"—

The Survey of Western Palestine, as illustrating Bible History.
Palestine East of the Jordan.
The Jerusalem Excavations.
A Restoration of Ancient Jerusalem.

(3) The Rev. Thomas Harrison, F.R.G.S., Member of the Society of Biblical Archæology, 38, Melrose Gardens, West Kensington Park, W. His subjects are as follows:—

(1) *Research and Discovery in the Holy Land.*
(2) *In the Track of the Israelites from Egypt to Canaan.*
(3) *Bible Scenes in the Light of Modern Science.*

REPORTS FROM JERUSALEM.

Rock-cut Cave at Silwân.—When, a few weeks ago, I went down to Silwân to choose one or two points for excavation, in order to settle the question of a *second aqueduct*, I was told by the people that there exists *another rock-cut chapel* with a large iron cross in it. So I requested them to show me the spot, which they did, bringing me into a large rock-hewn cave. It is no chapel at all, although there is on one of the walls a large cross. They stated this to be of *iron*, but I found it to be *plaster*, so blackened by smoke and age as to look like iron.

I enclose a plan and section of this cave. It is situated under the first house which the road coming from the water or the Pool of Silwân, and crossing the valley, leads to. The rock is cut perpendicular to a height of 20 feet, and has in it an opening 14 feet wide and 6 feet 4 inches high. A rock-cut step leads up to this opening, which is partly walled up, only a door about 4 feet wide being left, which has wooden doorposts and wooden door, which was locked, but on my wish opened. Ten steps lead downwards into the body of the cave; its flooring about 4 feet 6 inches deeper than the surface of the road and court outside. At the end of the steps is some masonry, on one side forming a large *recess* measuring about 10 feet by 10 feet, and used as a stable. The shape of the main cave is very irregular, and on the average (without the steps, &c.), 35 feet long, 30 feet wide, and 13 feet high—the highest point is 15 feet 3 inches, as the ceiling and flooring being not quite even. On the south wall, close to the stairs, is a *recess*, *not* an *apse*, as I had been told, for it is neither a half circle nor of any exact measure on its four sides. Of greater interest is a kind of *passage* cut into the rock on the same side, 2 feet 4 inches wide, 4 feet high, and 14 feet 8 inches long, and terminating abruptly. Its direction is not exactly in a straight line, and its floor has a slight slope upwards. This passage is 9 feet 6 inches above the flooring of the cave, which is here somewhat higher than the main flooring, forming a kind of step.

Opposite, on the northern wall, which is not so straight as the southern, is fixed the *cross* already mentioned. It is in relief, 3 feet long, with its lower end 6 feet above the floor. Although in several places on the side walls plaster is visible, yet it was no *cistern*, as no hole for a well is observable in the ceiling, and the bottom is not deep enough for that kind of cistern from which the water is fetched by the stairs. My humble opinion is, it was originally a *habitation* for men, and at the same time, or afterwards, used for a stable, magazine, and mill. The millstones are still there.

Excavations at Aceldama—or, as the natives call the hill higher up, *El Shamah*.[1]—Somewhat above the Aceldama building, near the top of

[1] Possibly a corruption of Chaudemar, the name given to the place in the 12th century.—Ed.

the hill, some excavations were made by the proprietor of the ground when about to cultivate it, and to plant vines and trees. Caves, scarps of the rock, mosaics, hewn stones, &c., were found; so I visited the place, and have to report the following. Some of the excavations had no important result; some are not finished, and those which seem to me interesting, are the following :—

(*a*) A kind of court or yard worked horizontally into the surface of the rock. As the ground rises towards the west the flooring is worked down to the level. On the eastern side, on some parts where the rock lies deep, it is restored by mosaics of somewhat large stone cubes. This court is on an average 32 feet long and 19 feet 6 inches wide, and has at its eastern end two small pools. The smaller one is 4 feet wide each way and 3 feet 6 inches deep, and from its bottom a round hole leads to the larger one, which is 8 feet long, 5 feet wide, and 5 feet deep, and has on its bottom a kind of shaft 3 feet 6 inches deep. This is round, and at its middle has an *upset*, so that the lower part is narrower than the upper, which has a diameter of 2 feet. This shaft, as well as the sides and bottoms of both pools, are laid with such dies or cubes as are mentioned above, and over them there is no plaster. What was the use of these things? It is not easy to say. The proprietor thinks they formed a *bath*, as he has found in the pools some white stuff which he thinks to be the sediment of soap. But this is not likely to be the case, and I rather think the white stuff is the remains of *lead*, with which the pools were overlaid, instead of cement. A bath also does not want such a court, but rather adjoining buildings. So I think it was a store-house or fabric of wine or oil.

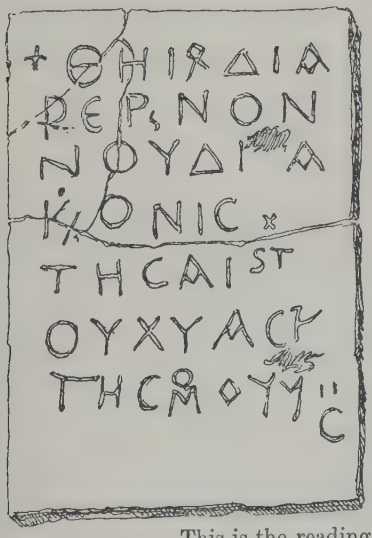
(*b*) Some caves and scarps with steps, &c. Close by are some rock-cut tombs, of no special interest, unless the large stone which was found before the door be reckoned as such.

(*c*) Farther west are other and more interesting rock-cut tombs. The workmanship is excellent, walls straight, and angles exact. The entrance, as in all rock-cut tombs, is square, 2 feet 4 inches wide and 2 feet 6 inches high; inside of it, four steps lead down into a square chamber 11 feet long and 10 feet wide, and 6 feet 4 inches high. On the walls opposite the entrance, and on the two other sides, are deep recesses cut in the rock each 7 feet long, 2 feet 4 inches high, and 3 feet deep, so forming three tombs or places where a coffin or sarcophagus might be put; yet it is clear that it was not intended for such, for on the bottom, which is about one inch deeper than the bench in front, is hewn out from the rock a kind of couch, with a shallow place for the reception of the head of the corpse. The bench before the eastern recess is only 1 foot 3 inches wide, whereas the southern is nearly 3 feet, and the western a little more than 3 feet wide. The top and sides are smooth. On the western side, where it joins the southern, and below the upper edge, there is a Greek *inscription*, from which I took a squeeze and made a good copy, which I enclose.

C. Schick.

The Greek Inscriptions on Tombs north of Damascus Gate.

In answer to enquiries respecting the Greek inscription said to have been found in the Dominican ground north of Damascus Gate (*Quarterly Statement*, 1890, p. 3), on the 30th July last I sent a description and some drawings of two newly-discovered tombs at St. Stephen's, near Jeremiah's Grotto, one still with a stone door, the other one having once had a rolling stone. On each of these were Greek inscriptions, of which I sent copies (*Quarterly Statement*, 1890, p. 10). I mentioned also that on one, the covering stone of the entrance, there was also an inscription, but it had been broken in pieces and taken away by the monks. They made a wooden frame, and put the pieces together into the frame, and sent squeezes of the inscription to Paris, where it has been published in a paper called "Cosmos," No. 235, July 27th, 1889, together with notes and interpretations. I also inclose herewith a copy (reduced to about $\frac{1}{20}$). The slab is about 3½ feet long and 2 feet 9 inches wide, and 6 or 7 inches thick; the letters are engraved, and the stone is broken into four or five pieces, and in some places the letters have suffered by weathering.



+ Θῆκ(αι) αἰδ-
φερ(ουσαι) Νόν-
νου δια (κόνον)
καὶ Ονισ(ίμοα διακόνδ)
τῆς ἁγ(ιας) τ-
οὐ χ(ρισθο) ῖ ᾽Α(νάϑσθ(άσεως)
τες μο(νῆς) αὐτῆ-
]

This is the reading of Dr. Papodoculos.

Dr. Papodoculos, a learned man in the Greek Convent, tells me the inscription is abbreviated, and may be read so that it becomes fatal to the traditional site of the Holy Sepulchre, but that before one can speak positively more proofs must be looked for, and as the matter now stands it is better not to make too much of it. He thinks it is clear from the inscription that the newly-discovered tombs were those of two deacons, Nonus and Onisimus, of the Church of the Resurrection, but that this does not prove that the church itself stood near their tombs. It seems to me

that they may have belonged to the clergy of the church on the traditional site of the Holy Sepulchre, and have been buried here in the general burial ground. However, the learned in England will read the inscription properly and settle the question ; I simply report upon it.

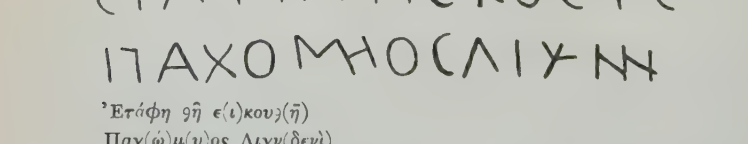
C. Schick.

This inscription has been submitted to Dr. A. S. Murray, of the British Museum, who is well known for his intimate knowledge of Greek epigraphy, and he gives the following criticism upon it :—

There is a family likeness between the inscription you have sent me and one which Boeckh (C. I. Gr. 9139) gives as *on the door of a cave at Jerusalem*. The copies he had access to differed much among themselves and he was uncertain of restoring the original. The reading of Papodoculos has probably been made with Boeckh's before him, and may, I think, pass. Here is Boeckh's inscription :—

† ΘΗΚΗ ΔΙΑΦΕΡΟΥCΑΗΓΕΜ	Θήκη διαφέρουσα Ἡ(ρ)εμίᾳ
ΤΩΦΕΡ . . . . . ΓΩΝΟΘΕΤΗ	ἱερ(ομ. τοῦ) μ(ο)ναστηρ. (τῆς ἁγίας)
ΔΕCΙΜ . . . . . Ι8 ΒΕΝΑS	Θέκλα[ς καὶ . . . . .
ΚΕΥΑ . . . . Τ8 ΓΕΡ	(καπασ)κευα(σμέν)ου Γερ(μανι)
ΚΟΥΤ8 . . . . . ΓΙ8Η	κοῦ τοῦ . . . . . ου
† ΤΗC ΑΓΙΑCCΙΩΝ	τῆς ἁγιάς Σιών.

As regards the smaller inscription which Papodoculos renders as follows : "Pachomios was buried on the 20th (of some month and of some year)," a possible alternative would be to suppose the name of the deceased person to be lost at the beginning of the inscription. The sense would then be ". . . . was buried on the 20th of (the month) Pachon, in the 11th year of the Indiction" (*ἐτάφη τῇ ἐ(ι)κοστ(ῇ) Γαχ(ὼ)νος λ. ἰνδ(ικτιῶνος)*). But I have had hardly any experience of these Christian Greek inscriptions, and therefore cannot speak with confidence. The name Pachomios, which Papodoculos restores, may be right, but his reading of the word that follows seems to be wrong.



Ἐτάφη ϑῇ ϵ(ι)κουϑ(ῇ)
Παχ(ὼ)μ(υ)ος Λιχν(δενὶ)

= on the twentieth (of a certain month of a certain year) Pachomios from Lychis dos (*?*) was buried.

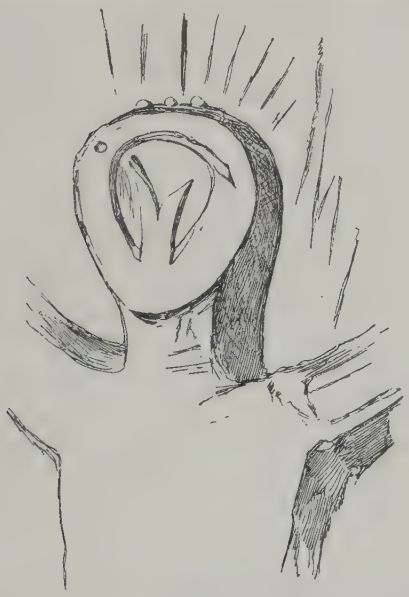
A. S. Murray.

CAVE OF SARÎS.

I HAVE again visited the cave at Saris, and forward the results of my attempts to obtain squeezes of the marks or characters which were noticed by me in the place where an inscription was said to have been, but which was destroyed by the peasant who had hoped to find treasure.

Mr. Schick was unable to accompany me, but he kindly allowed me to take with me an intelligent young man in his employ who proved very useful.

I was also happy in being accompanied by Mr. Lees, who came at my invitation and kindly sketched the two figures in the cave. These sketches I also forward with the squeezes, and a rough plan of the cave, with section of the pit, and also a sketch copy of the vestiges of letters, and a full sized sketch of the head of the figure on the east wall, which is very curious, the face having instead of eyes, nose, mouth, &c., an ornament very much resembling a double dagger-shaped leaf.



We did not find any letters near the figures, but a close inspection showed that when the cave was made, they had been outlined by means of a drill or borer, in such a manner that when the adjacent stone was cut away, the figures remained standing out in relief. The lower portion of many of the drill holes is distinctly visible, as shown in one of Mr. Lee's sketches, and also in that of the head itself.

Since I first visited the cave last June others have been on the spot.

The Jerusalem Freemasons especially, seem to have been quite excited by the accounts of the attitude of the figures, and about two months ago a large party of them, headed by the Master and some other officers of their society, actually made an expedition in search of it, and cleared the earth, broken pottery, and bones, in the pit or square trough in the south-eastern corner. I have made special enquiries of some who were of the party, but could not learn that they had discovered anything of importance except some broken jars or cruses (imbriks). However, their visit was of service in so far as it saved us the trouble of clearing out the four-foot deep pit or trough, which at the western end has at the top a step or ledge. The floor of the cave round the western and southern walls had been cleared, so that we had only to excavate in the centre to ascertain the level there, as the floor outside the pit seems to shelve towards the centre from all sides. To do this was no easy task, as besides the stuff which had come out of the pit, the soil in the cave is very hard and full of tree roots which had penetrated in search of moisture. The rock floor in the centre of the cave is five feet from the ceiling. At the north-west, south-west, and south-east corners it is three feet from the ceiling. In the south-east corner the rock overhangs the pit.

In the rubbish that had been taken out of the pit Mr. Lees found a broken *siraj* or earthenware shell-shaped lamp like those used at the present day by the Fellahin, only larger. From the rock terrace above the cave there is a magnificent view over the sea-board plain. We saw the range of Carmel very clearly with the naked eye, and, of course, yet more so with a field glass.

I enclose a squeeze of a small Greek inscription in raised letters found stone dug up lately close to the tombs of the Prophets on Olivet.

I have not had time to write out the list of Judeo-Spanish proverbs which I promised some months ago. I have begun but do not know when I shall finish. We missionaries, however intensely we may be interested in the Palestine Exploration Fund work, can seldom find leisure to indulge in it.

P.S.—In my report I described the cave as being hewn out of *narie* rock, soft to work, but hardening by exposure; I was mistaken, it is hard *mizzie*.

J. E. Hanauer.

IRRIGATION AND WATER SUPPLY IN SYRIA.

Referring to the notice by Mr. Simpson upon the above subject in the last *Quarterly Statement*, I may mention that in April, 1889, while riding with my wife from Palmyra to El Beda, on our return journey from the former place, I observed a considerable number of pits such as those which Mr. Simpson describes. Those that I saw were within a few miles of Palmyra, and were, I should judge, distant from 200

to 300 yards from one another. But I did not observe carefully. Our men stopped at two of them and found water. I supposed that they were old irrigation pits communicating with one another by an underground channel, and fed from the hills on the north side of the gap to the east of which Palmyra stands. I made no examination of them, however, being ill at the time, and engaged in struggling against a strong west wind, which carried so much sand with it as to be most unpleasant.

I do not remember to have seen El Beda mentioned in any of the guide books or accounts of journeys to Palmyra. It is considerably to the north of the direct route from Karyatin to Palmyra, and about six hours ride from Palmyra. It consists of a well of brackish water, and a small block house, which as I was told had been recently established by the Turkish Government, and in which an officer and eight soldiers, with their horses, are stationed. The establishment of this station makes the journey between Palmyra and Karyatin easier and safer than it was before.

With regard to Palmyra, I will mention another matter which may be of interest.

All modern notices of the place which I have read refer to the fact that no fresh water is to be found there, and some express wonder at the ancient prosperity of the Palmyrenes in the absence of this requisite. The guide books recommend the traveller to bring a supply of drinking water with him, as the stream of sulphurous water which, until last summer, was alone known in modern times as the source of supply there, is very disagreeable to the taste. We were, therefore, much surprised to find that the stream near to which our tents were pitched was fresh and pure. It appears that it was only discovered in the summer of 1888, and that we were the first European travellers to see it. It runs only a few feet under the surface of the ground, in an old flagged channel or conduit which widens out at the spot where it now comes to light so as to admit of a landing, on which people coming to fetch water or to bathe can stand, and it was a very interesting sight to see the hot and thirsty Arabs, engaged in digging during the day in other parts of the ruins for water which they had not yet found, rush rejoicing at sunset to this spot. But the artificial channel ending here, the water disappears a few yards further on in a sandy hollow. The volume of water was about 16 inches deep by 22 wide ; it was tepid, but when cooled in earthenware jars very pleasant and refreshing to the taste. I have no doubt that there are several similar streams conducted by similar channels in other parts of the ruins. The surface of the ground (presumably in consequence of the accumulation of sand blown in from the desert) has evidently risen since the erection of the chief buildings (as one may see from the proportions of the arches and columns in many places), and probably this is the cause of the disappearance of these streams. The finding of this stream has stirred up the inhabitants to search for more fresh water, and pits were sinking in several places during our visit.

GRAY HILL.

MA'LULA AND ITS DIALECT.

The village of Ma'lula in the Anti-Libanus has a three-fold interest for the traveller. Its situation and surrounding scenery are unique, its cave-dwellings and rock-tombs give evidence of an ancient but active existence, while in its dialect we find a certain strange survival of the Aramaic which Christ spoke not 150 miles away.

My first glimpse of Ma'lula was in March 1888, on my way to Palmyra. Roughly speaking, Ma'lula is about 25 miles to the north-east of Damascus, and is reached in about eight hours. At about three and a-half hours' distance from that city the path crosses a steep ridge and enters a broad rolling valley running N.E. and S.W., bounded on the east by slight hills, rising in places to higher peaks. The western boundary is one long, almost unbroken, ridge, of a curious formation. The mountain runs up smoothly for several hundred feet, with a surface of light tinted shale and gravel, terminating in a palisade of reddish-yellow limestone, from 50 to 150 feet in height, making an irregular sky-line. This columnar wall runs along the top of the ridge for 20 miles or so. It takes strange fantastic shapes, often like pillars or pilasters, now like giant teeth with monstrous roots, and now like animal forms. The red and yellow of this irregular wall cutting sharp against the vivid blue produces a brilliant effect of colour. Sometimes the gravelly hill appears above the palisade, but not often.

Before reaching Ma'lula the ridge is twice broken, once by a gorge leading to the small village of Jeb'adîn, and again where the Yebrûd road crosses through a second gorge to the higher hills. About three miles beyond this point the ridge curves sharply inward and downward, rights itself for a few hundred yards, then curves outward and upward again, and resumes its former N.E. direction. In the meantime it has formed a deep basin, the shape of an amphitheatre, bounded by massive cliffs, which are pierced at the two inward corners by rapidly-ascending gorges. Great rocks and boulders lie on the steep slopes, or are heaped together at the base of the cliffs. Clinging to these rocks, rising tier above tier, like the cells of a honeycomb, are the houses which form the village of Ma'lula. The houses are built of *libîn* or unburnt brick, rough unhewn stones, and mud. A few arches appear. Many of the flat roofs project, and are supported by posts, thus forming a sort of balcony. Brushwood is used in the roofs and peeps out from under the eaves. The mud and scant whitewash give the town an appearance of brown and white. The houses are at all angles: one stands out boldly on a great rock, another retreats under the overhanging precipice. A simple square Church with belfry gives point to the collection of simple houses. Under the north cliff lie the substantial buildings of the Convent of Mar Tukla. On this same side of the town there are a few substantial stone houses, but as a rule the buildings differ little from each other, in point of simplicity.

A valley opens out from the Ma'lula natural amphitheatre into the long upland, which I have mentioned. It is watered by streams from the

two gorges, and is rich in great walnut and other fruit trees, as plums, pistachio, and apricots. The limestone soil is of a dazzling whiteness, especially just outside the amphitheatre, where the path crosses ledges of soft polished white rock, easily carved, and used very effectively in decoration, as in the houses of Yebrûd. At the north side of the village threshing floors have been carved out of the hillside—rounded, level places—curious white spots in the landscape. Beyond these the hillside is strewn with sumach trees, or shrubs, used in tanning. Judging from the number of threshing floors I should say that the town must own many wheat fields in the rolling country below. Perched high above the lofty cliffs at the back of the town is the Convent of Mar Sarkis, with its metal dome. On these upper hills, the colour of maize, are many vineyards.

These general features were noticed in my first visit, when we passed through hurriedly. As we entered further into the cliff-bound recess we saw the caves high up in the face of the precipices to north and south, and the dozens of square entrance holes to chambers within the cliff at the back of the town—some apparently inaccessible, so high were they.

We rode through the twisting streets, finding the people very friendly. Once the path wound along a covered gallery fifty feet long, with dwellings above. Soon the path became precipitous; we dismounted and led our horses up a series of ledges. The baggage animal, which was ahead, slipped and began to roll, we, meanwhile, standing each on his own ledge quite helpless in view of the coming avalanche. Fortunately something stopped the horse, but the load had to be carried up by men through the magnificent gorge. At the end it is simply a climb up a fissure, where the horses lifted their legs from one deep hole in the rock to another.

In June of this year (1889) a friend and myself planned to spend a few days at Ma'lula, being curious to find out something about the Syriac dialect spoken by the inhabitants. We arrived on a Saturday evening, and remained till the following Thursday morning. In the meantime we asked many questions, and examined the Convents, cliff chambers, and tombs. I had not at the time the plan of writing an exhaustive article on the place, hence the impressions here given are merely those of an interested traveller, and lack many particulars which a scientific description should contain.

We approached the village from the north-east, as we were coming from Yebrûd, having crossed the ridge about an hour to the north. We pitched our tent on a spot cleared and built up for a threshing floor, on a slope of the hill below the northern cliff, at some little distance from the village. On Sunday, the people having no work to do, crowded about the tent—sitting outside the door, peeping in through the cracks, and even crouching inside. Oddly enough they were not troublesome. They simply wished to "admire." They were neither impertinent nor intrusive, and they kept quiet. We found their good humour unfailing. They were alert, active, and merry, but without the same conceit one finds in the Lebanon. The type of face did not seem to me as distinct as that of

Yebrûd; dark hair and eyes are the rule; the faces are round, and the features not striking. There were many comely women, with fresh complexions. We saw few dull countenances. We heard the echoes of one or two violent quarrels, but in their general mutual intercourse the people seemed gentle and agreeable. Their enterprise is shown by the number of men and boys who go to Damascus for work, always, however, regarding Ma'lula as their home. The majority go as bakers, while some are servants. Baking is the art of the town; the brother of the Sheikh works in the oven.

After some inquiry we estimated the population at 2,000, including the absent. Two-thirds are Greek Catholics, the remainder are Orthodox Greek, with about twenty Moslem families, not to be distinguished in dress or language from the Christians. The people seem about on a par with each other, there being no aristocracy. The Greek-Catholic priest is a native of the place. He spoke a little French. The men all wear the veil or shawl on the head, falling over the shoulders. It is bound with thick camel-hair rope. The cloth robe which they wear over their waistcoat and full trousers struck me as much shorter than what one usually sees. The men are not heavily bearded, nor does the beard seem to come as early in youth as it does in the Lebanon. There is a school in the village, where we saw a few small boys. The teacher boards with the pupils by turn. He teaches Arabic, reading, and writing. He was sent to the town by the Bishop of Yebrûd.

All speak the Syriac dialect; they say a woman brought as a bride from elsewhere can learn it in a year. At the same time they all speak Arabic like any Syrian. They seemed much interested and amused by our desire to look into their language, and were most good-natured in answering questions, but we found a varying intelligence in their answers; the trouble with many being that they gave much more than was asked. Speaking the Arabic, I found little difficulty in obtaining information. If in doubt as to what one person meant, I could always ask another.

The streets in the village are often ledges of rock along the steep slope. The houses are sometimes built over the street. Near the north gorge there is a house wedged in between the overhanging cliff and a huge boulder, with an arched gallery beneath it for the highway. It has a balcony in front, supported by a single beam. The light green of willow branches contrasts with the whitewashed wall. Entering the passage under the house, we followed it up sharply to the left, and there found on our right a narrow flight of mud-steps, whitewashed, leading back to a platform-roof opening on which was the door of the house! Within everything was very clean. The rough walls formed by cliff and boulder were whitewashed. A sick man lay on a bed on the floor. His son, who had been in Damascus, and kept one of the three small shops in the village, asked us how we made gunpowder, as he wished to compare our method with his own.

Later we called at another house in response to a cordial invitation from its mistress. From a small enclosed yard whitewashed steps of mud

led up to a roof in front of a house of two rooms. Steps, roof, walls, floor were all of this whitened mud, which comes off on the clothes. The room in which we were received had two windows and small openings above for ventilation. In one corner a cone-shaped chimney of mud came down to within 3 feet of the floor. At the angles between it and the walls there were ornamented pockets of mud. Its surface was also ornamented. The projecting angle of the chimney had a place for a lamp. Below there was no hearth, but only a place for one pot or kettle rounded out from a low platform of mud. The mud of the walls in the room was worked into pockets, ledges, shelves, rudely ornamented in rosettes and twists, with bits of glass stuck in. Chimneys are not found in the Lebanon houses, but they occur in the Anti-Libanus as near the Buka'a as Zebedani. In the other room the family stores were kept in jars made of mud and straw, whitewashed. Later in the day a fierce wind blew threatening to overthrow the tent, so we took refuge in this clean house for two nights. The woman baked bread (barley bread as well as wheaten) for the neighbours, who paid her in kind, the number of loaves being left to generosity. A fire kindled at the bottom of a pit in a mud projection at the side of the house heated its sides, against which were stuck the flat loaves, which gradually became baked.

In passing through the town we found the houses clean. We were often warned against bye-paths, because of the house-dogs. They certainly had a most villainous look. Bees are kept. We could get no meat, as there happened to be a feast, but in a village like Ma'lula there would hardly be meat oftener than once a week. Such people live on bread, cheese, olives, eggs, dibs, and vegetables in their season. Unripe fruit is much prized—as grapes (eaten with salt), plums, &c. The people rise with the dawn.

The Sheikh's house differed little from the rest, but it had a stone doorway, with some carving and coloured ornamentation. The office of Sheikh continues in the same family. He was away, but his brother (who left the oven to entertain us) said that the house was to be improved and enlarged.

In speaking of the caves and rock-chambers of Ma'lula it will be convenient to refer to the South Cliff, Central Cliff, and North Cliff of the great natural amphitheatre. These cliffs are about 150 feet in height. About 35 feet above the base of the South Cliff a cave opens in the face of the rock, the entrance being about 20 feet in length. A rude ladder, made by two irregular branches or trunks of ancient walnut trees, with rounds fastened by large nails, is the rather risky means of approach. Our servant climbed up first, disappeared in the cave, and then reappeared at a square window cut in the face of the rock some 40 feet to the left of the entrance (as we looked at it) and rather above it. We then scaled the ladder, and scrambled around the rude masonry that forms a parapet at the entrance of the cave. This wall is made partly of stones and partly of large blocks of wood. Within there are two or three plastered walls (in a somewhat ruined condition), of mud and straw, forming small

passages and shutting off the main part of the cave, which runs sloping up *behind* the face of the cliff for some 52 feet. This, added to the 20 feet of entrance, gives 72 feet as the face length. The cave then turns and slopes up inward for 70 feet more. Here the breadth is considerable. The height is from 10 to 15 feet. Before the cave turns inward a low, artificial passage leads off at right angles, through which one must creep, into a small chamber, from which a similar gallery leads to the interior cavern. Marks of the chisel or pick are everywhere visible, so that it is impossible to tell how much a natural cavern may have been enlarged. The square window in the face of the cliff has an embrasure of 3 or 4 feet, and a parapet with a drainage hole below to the right. The cliff below this hole is stained. Sockets and holes at the side show that the window may have been bolted or barred. Near the entrance, within the cave on a ledge, there are signs of an ancient inscription in large Greek letters, irregularly following the irregular surface of the ledge, something like this :—

It was not until we had been in the cave for an hour that we noticed the faint letters, and I daresay a strong sun might reveal others. A few ruder letters in red paint also occur ; also there were some plaster remains on the cave wall, rough figures of a giraffe, a horse, a bird, and a camel, with rider apparently holding an umbrella ! This last I do not recall, but my friend assures me he saw it. We noticed pretty maidenhair growing above another ledge, then damp moss on the ledge itself, then a basin scooped out, a foot across, with a tiny channel 8 inches long leading to a small hole. This was the only sign we saw of a water supply in the cave.

When we descended to the base of the cliff we found a stout, jolly man, bearing a strong resemblance to King Henry the Eighth, who said that in the troubles of 1860 he had hid for days in that cave with the women and children. All the walls within were then there : they did nothing to the place. In the face of the same cliff, somewhat to the west, there is another cave, with masonry at the entrance. This the man said was smaller, and we did not visit it. At the base of the cliff, some yards up, there are holes 12 or 15 inches square, cut in the rock at regular intervals, probably beam ends, used in the roof of some building, perhaps some public place, as the structure indicated must have been large. This cliff-castle is similar to the better known one in the Southern Lebanon, Kala'at Niha, near Jezzīn, where the Emir Fukher-ed-dīn Ma'n, held out against the Turks. There a long ledge projecting from a cliff was utilised for castle and dwelling ; beam ends occur above each other, suggesting two or three stories, water was brought by a channel from above, small reservoirs appear, granaries were carved in the rock, &c., &c. The Emir must have taken advantage of some ancient cliff dwelling, dating perhaps from the time of the one at Ma'lula.

On the huge detached boulders at the foot of the South Cliff are found many tombs. In many cases they are simply cut in the tops of rocks. One rock, far below, has steps cut to the top. There seems to have been a passion for cutting in these stones, as there are many shallow, arched recesses on detached rocks, apparently useless. Other arched recesses have a couple of tombs in them. On one great boulder an elaborate arch is cut, with a balustrade below and several deep tombs within. In another place the tombs are two deep, with a ledge, as if for cover between.

The West Cliff, directly above the town, is perforated with many square holes—entrances to dwellings cut in the heart of the rock. Some of these have been fitted with modern doors, and are used as storehouses. One is so high that at a distance it seems quite inaccessible, but on approach one finds beam-ends below, showing that the cliff-chamber might have been approached from the roof of some building in front. At the south end of this central cliff the beam ends occur in several tiers, above each other. In one place steps lead up the cliff to a chamber. We entered several rooms and found them of varying sizes, some as large as 15 feet square. At the back of one chamber there was an arch, and on the surface of the rock at its side, slightly smoothed for the purpose, was this inscription, not perfectly clear, but apparently inclusive :

ЄΤΟΥCΗΙΥΥ – – ΙΟΦΙΧΛΟΥ
ΠΑΤΡΟΚΛΟΥЄΠΟΙΗCΑ

ΝΤΗΝΚΟΝΧΗΝΟΓ
ΜΕΡΟΥCΗΜΟΙCΟΥC
ΠΩΘЄΩΜΑΛΑΧΗΔΑΑ
ЄΙΑΝ

Another rock-dwelling consisted of two rooms. In one room at the side there was an elevation as for seat or divan. The rock hung down somewhat over the lintel of the inner door, which had this inscription, in rude letters, some of which were rather indefinite :

ЄΤΟΥCΗΟΥΑΥΔΝЄΟΥΓΧЄΙΛΟC
ΖΑΒΔЄΟΥΑΒΙCΑΛΥΥΛCЄΡΜΟΥ

In another chamber we found traces of a much longer inscription of nine lines, too indistinct for us to read. The guide told us that the above inscriptions had been copied by travellers. All the chambers in the West Cliff are quite artificial, the walls are always straight and the angles true. Slightly carved in the face of the cliff is a large arch, apparently to no purpose. Here also are small recesses like those we noticed below. In one chamber a small channel or open drain crosses the floor and disappears into the mountain at the back of the room. In another are two vats, one lower than the other but connected with it.

On the rocks outside the chambers and at a little distance are more tombs, but the chambers themselves as a rule are without tombs.

The rocks and cliffs of the South Gorge are wild and splendid, but contain no tombs. A side valley, lined with fantastic rocks and choked with boulders, enters from the south. Near by, a huge rock hollowed out like an oblong box, set on end, is called the "Hanging Place," because of a round hole in the top. One looks up to the summit of the South Cliff and is startled by its resemblance to a bear. A shallow groove runs down the cliff at one side of the gorge; as it comes to nothing it looks as if it were merely to drain the rocks above, especially as we find these drain-lines in the cliffs above the convent of Mar Tukla.

The North Gorge is more interesting. The path for horses climbs over the rocks at one side, but we followed up the brook which emerged from a narrow fissure with lofty perpendicular sides. Narrower grew the winding chasm, and we had to use our hands quite as much as our feet in getting along. Presently we heard a sound behind us, and we flattened ourselves against the walls to let pass two women with cows. As they splashed through the tiny brook their progress was more rapid than ours. They told us that God had opened up this fissure as a way for Mar Tukla, who was fleeing from her enemies, and pointed to a deep groove or aqueduct high up in the side of the cliff as the path on which she walked. We traced this aqueduct almost to the fountain on the open land above.

Mar Tukla is said to have been a companion of St. Paul's; the tradition is doubtless ancient, and thus some light is thrown upon the antiquity of the channel-aqueduct, and perhaps on ancient Ma'lula itself, as those responsible for the tradition had no notion of its real origin.

Another day we followed the horse-path up the gorge and found quantities of tombs—some open and some in rooms. Here also were large chambers, partly cavernous and partly artificial. One was regularly vaulted, with incomplete pillars not extending far below the vault. It had a broad doorway, with sockets. It contained three vats, and a place that might have been a tomb, or a place for stores. Another contained lamp-niches, a stone seat, rings cut in floor and walls, plastered holes, and vats sunk in the stone floor, used now in the preparation of sumach.

To one approaching Ma'lula from the high lands to the west, the ledges of rock which line the summits of the hills above the amphitheatre seem to roll up to the sheer edge of the precipice like angry waves of grey-white foam. Or to take a milder figure, the ledges appear sometimes like the wrinkled surface of cream or curds. In the ledges above the Central or West Cliff we find the greatest number of rock-dwellings. These are cut so near the surface of the hill that sometimes the roof of the chamber is no more than a foot thick. Some rooms are high and spacious, others not high enough to stand in. One room had an arched recess, precisely like the modern yuk, in which the beds of the family are piled by day; seats; cupboards; rings in the roof. Some chambers

seem to have been ancient wine or oil presses, with vats at different levels connected by channels.

Outside were shallow, rectangular reservoirs. One chamber had a hole near the roof in the back wall, connecting it with a room cut in a higher ledge of the mountain. The chambers are near each other and the top of the hill is quite honey-combed with this rock-city. No tombs occur here.

Mar Serkis, the Latin Serjius, is perched on these cliffs. It is a plain quadrangle with two galleried stories about a court, and has a chapel with small dome in the centre. Within the chapel we found a stone screen, with a series of western-looking panel pictures above. The altar was canopied, surmounted by dome and cross.

At the back of the nave was a ruined gallery. The convent belongs to the Greek Catholics. In the Greek Orthodox churches the screen is usually wooden, with three doors, surmounted by panels and a huge wooden cross, with painting on it. There is only one priest at Mar Serkis, who received us hospitably. There are no monks. The wine of the convent, so the priest said, is celebrated. It seemed very pure, but somewhat heavy and flavourless. A fine fruit garden stretches behind the convent, at some little distance below.

The Cave-Castle of the North Cliff is approached from above, as it opens into the face of the rock, some 100 feet above its base. We toiled up the sloping ledges, crawled through a small tunnel on our hands and knees, and then descended a narrow fissure in which little holes were notched, to a short ladder dropping to the cave itself. The descent from the tunnel above must have measured 30 or 35 feet if not more. The view was splendid ; taking in the grandly-coloured cliffs opposite, the richly green gardens far below, the white houses of the town, also far below, the roofs covered with brush, with people walking over them, the dome of Mar Serkis, and the green of the vines on the upper hills of yellow, saffron, brown, white, and maize.

The floor of the cave was very sloping. In front was a parapet of stones and mud. Along the face the cave dimensions were 50 by 20 feet. At one end it rounded into the mountain to a further depth of 25 feet. The cave seemed mostly natural. In the roof were two holes, evidently artificial, apparently drilled from above ; and there was a larger hole in the wall, soon branching into two funnels. Could this have been for water supply ?

We have now touched on all the rock dwellings and chiselled stones of Ma'lula except those under the further end of the North Cliff. The largest chamber we found was one recently opened in the hill, below our tent. This measured 20 by 40 feet. Its roof was supported by four pillars—the natural rock left standing when the room was carved out. It was divided into two parts by a low wall, only two or three feet high. It contained seats, rings, niches for lamps, etc.

The only sign of sculpture was on a detached boulder above the tent. Here, on two arched panels, were figures of a man and woman, or two

men perhaps, the features quite destroyed. On the arched border of one panel was this inscription :—

ЄΓNATIAPЄPЄNIKHTAIOCIOYAIOC

? ? ?

ΛPCC

After all this detail about tombs, chambers, and caves, perhaps a few words of recapitulation will make the matter clearer.

We have in ancient Ma'lula not only a large rock cemetery, but a town of rock dwellings, which must have supported no small population. While some tombs are found in recesses and chambers, the majority are in the surface of rocks. Dwelling-houses are thickest on the hill behind the West Cliff, where there are no tombs. Below, tombs and chambers occur side by side. There may have been a large public building against the South Cliff. Both North and South Cliffs have cave-castles. Numerous beam-ends show that houses of wood or hewn stone occurred, in addition to the rock-dwellings. The business part of the town must have been above the North Gorge, where the vats, pits, &c., are rather more numerous, though they are found elsewhere. As to the origin of the cave dwellings, the present people of Ma'lula seem to have no idea.

The traditions of the place cluster around Mar Tukla. This convent is most picturesquely placed in the angle made by the North Cliff with the North Gorge. Its many buildings are shown at different angles on the steep slope. Terraces, arcades, courts, diversify its appearance.

A series of arches, with wall, set in the face of a lofty cavern in the cliff above makes a most charming combination of art and nature. We sent our servant on before to announce us, and then followed him up to the comfortably furnished room where the head of the convent received us. The Archimandrite Macarius Saleba is a Syrian, of about 60 years, with pleasant, if somewhat patronising, manner. His face is agreeable, dignified, though not intellectual. He asked many questions, for example, as to the relative position of New York and London. He was much interested in hearing of our visit to the Convent of St. Catherine at Sinai. On our showing him a ring consecrated on the Saint's relics and presented to us by the Prior, he took it, crossed his right eye with it, then the left, then the mouth. We were served with sweets, including delicious *mastik*, a drink prepared from some fruit essence, which made us all, including the servant, quite ill later on, and delicious coffee. My friend had a small detective camera which takes a picture about 3½ inches square. The Archimandrite asked us to take his likeness. However, he gave such elaborate instructions to his deacon to bring robes, a great silver cross, &c., &c., that I told him that after all the result would be but small. "What!" said he. "Not as large as that picture?" pointing to some coarse print on the wall two or three feet square. "No," said I; "it cannot be larger than this," pointing to the tiny camera. The Archimandrite was disgusted. "Here, take this cross," he said, and it was a

few moments before his dignity recovered the attack made upon it. It is needless to add he refused to be photographed.

Mar Tukla, according to the Prior's account, lived "40 years after Christ." Her name in Greek was Seleukias. (A man in the village told us that the ancient name of Ma'lula was Seleukia.) She was a native of Iconium, was engaged to the son of the King, but on her conversion desired to lead a single life, and fled. On reaching Ma'lula the miraculous passage was opened for her. She followed St. Paul to Rome. He said to her: "You have become as one of us; return to your own country and preach the Gospel." Later she lived in the cave above the Convent, which we visited with the deacon. Here a basin of ice-cold water, very holy, is formed by the perpetual droppings from the rock above. She lived in the part of the cave where the small chapel is built. Here are brought the sick of all creeds, including Moslems and Druzes, for cure. The deacon told us that only two days before a woman had been brought from Suddud (the ancient Zedad mentioned in Numb. xxxiv, 8, two days' journey from Ma'lula), all doubled up and carried in a box. She slept one night in the chapel and returned to her town, walking. At the back of the chapel is a small closed aperture, behind which the Saint was buried. A workman once tried to open the tomb, but a blast or some power came out which either paralysed or killed him.

Later on, in Damascus, I heard from the Ma'lulites there resident some more legends and tales of Mar Tukla, which I insert here. According to my informants, her people were Moslems. It will be remembered in this connection that she was a companion of St. Paul's. When fleeing from her persecutors she passed a fellah. Taking up a burnt stick, she stuck it into the ground, and said to the peasant, "If people come along and inquire for a girl, tell them that the girl who passed by planted this." She went on her way, and presently her people appeared. The burnt stick had put forth flowers; the persecutors, evidently believing that the girl who planted that shrub could not have passed recently, turned back, giving up the pursuit. When living in her cave she cured people by laying hands on the head. After her death her people came to steal her body; she appeared in the night to the Prior of the Convent and said, "They have stolen my body." At the third summons he arose, went in pursuit, and brought back the body.

Mar Tukla's presence in the village is a real thing to the people to-day. They speak of her as a "lady we have here." A friend of mine was recently in the village and heard an excited discussion. A man who had a dispute about money matters was declaring that Mar Tukla had appeared to him in a field, and had given her judgment of the affair; as the decision was favourable to himself, some scepticism prevailed in the opposite party. However, many believed in the appearance.

My Ma'lula friends say that once a man coming from Hums was greatly imperilled by a storm of rain and snow. He cried out, "If God will save me and my beast, I will offer a drop of oil to the Saint at Ma'lula." Immediately the storm ceased. On arriving at the Convent

he expressed his gratitude by offering half a pint of oil to Mar Tukla. Then he ate his dinner and spent a pleasant evening. Later on he visited the cave and found something wrong with the oil, just what I could not understand. However, he went to the Prior, told his story, and asked why the Saint was displeased. "Ah!" said the Prior. "You have not performed your vow. You promised a drop, and you presented half a pint. The Saint wishes no more and no less than you vow." So the man mounted to the cave, poured off all the oil but one drop, and the Saint was appeased.

A boy declared to me that he had seen a girl arrive in the village from Kuryatan, carried by four men, accompanied by her mother and bridegroom. She slept in the cave, and the boy affirms that he saw her the next day cured.

Another tale declares that a man in Salhieh, a suburb of Damascus, suffered with "all kinds of diseases." Having heard of Mar Tukla, he fattened a sheep and took it to Ma'lula as an offering. He was cured, and keeps up the offering yearly.

One evening a European arrived at the village and asked for shelter. He was taken in by the uncle of Machoil, the lad who taught me what I know of his dialect. During the evening the stranger said that he had had much pain in his legs for years; he had tried many medicines with no success. The host then said: "We have a lady here who can cure you." "Who is she, and what can she do?" said the Frank. The host then related the cures of the Saint. The Frank, however, remained unconvinced. Presently beds were spread on the floor and they retired. In the night the stranger felt some one treading on his legs and feet. Up he jumped, seized his host by the throat, and demanded what he meant by walking over him. The host indignantly repudiated the charge, and the fight would have waxed severe had not the Ma'lulite bethought himself of "the lady." "She has come to cure you," he declared. The next morning the Frank found that his pains had disappeared. His unbelief vanished, and he went up to the convent to make his acknowledgments to the Saint.

I asked if many Ma'lulites had been cured. "Not one," was the answer, "and the reason is this—when one of us is ill he says, I will go up to the convent and see whether perhaps the lady will cure me! It is that *perhaps* that spoils everything. We live in the place, and have no means of proving our faith. Those who travel, with difficulty, two, three, and four days, prove the strength of their faith, and so the Saint heals them."

To return to the convent. Besides the prior and the deacon, a nun was the only other person we saw in the establishment. There are suites of new rooms for the accommodation of numerous Damascenes who make Ma'lula a place for summer resort. On leaving they make presents to the convent. Similar guests are entertained at Mar Serkis. It was curious to notice in one of the rooms the yukh (or place for beds), so similar to what is carved from rock in the cave-dwellings.

The Archimandrite could tell us nothing of the history of the convent, but it was his impression that while the place was always held sacred, a convent had not been built till centuries after the Saint's death. I am sorry to say that we left without entering the church. This was an oversight that we meant to remedy. However, it was a simple square structure with flat roof. In no old convent in Syria have I seen a pointed roof, except in the church of the ruined square convent of Mar Mousa, in a gorge to the east of Nebk, off the Palmyra Road. This Mar Mousa Church bears a strong architectural resemblance to Justinian's Church at Mount Sinai.

My friend in the village told me that in an old book, no longer in the town, it was stated that Mohammed never entered Ma'lula, though the inhabitants hid for twelve years in the Cliff Castle. By "Mohammed," I suppose we may understand the Moslem army. I refer to this fact as significant in its possible relation to the survival of the old dialect, while the Arabic of the Conquerors supplanted this same old dialect in the rest of Syria, save in the small villages of Bukh'a and Jeb'adīn, not far from Ma'lula itself. It is difficult, perhaps idle, to speculate on the reasons for this sporadic survival. However, it is possible that if the people of Ma'lula kept out the conqueror, or if for some reason the conqueror did not care to enter, the population of this wild, secluded gorge, might have kept purer and more intact than that of the rest of Syria, and that this might account for the preservation of their own language. Once preserved for a century or so, during which it had disappeared from the rest of the country, local pride and local tradition would be enough to retain it as a local dialect. The people seemed to us proud of their language. Meanwhile, the Arabic spoken by the Ma'lulites is of the Damascus type, far purer in accent than that of their neighbours in Ma'arra, which bears a distinct Syriac flavour in its vocalization. This is curious, but admits of explanation. The people of Ma'arra gradually adopted the Arabic as their sole language, retaining the broad Syriac vowels. The Ma'lulites learned Arabic as a foreign tongue, and kept the Syriac vocalization for the Syriac language, pronouncing the Arabic like the Arabs. For example, the ordinary Arabic word for Damascus is pronounced by the Ma'arrites *Shawm*, by the Ma'lulites *Shêm*. However, such a speculation is a delicate one. Nebk and Yebrûd, situated hardly six miles apart, have easily distinguished accents.

Bukh'a and Jeb'adīn are Moslem villages, but there are indications that they were Christian not very long ago, perhaps within a couple of centuries. Bukh'a is on the high land above Ma'lula, and a few miles to the north. It is a miserable village, containing about twenty houses. Jeb'adīn is to the south of Ma'lula, about an hour away. It is approached by a wild gorge, and its fifty or more houses occupy the hills above. The dialect in these villages differs somewhat from that of Ma'lula. Even in my hurried visit I noticed a difference in the form of some words. It is strange that the dialect should have survived in these two villages, and should have disappeared in 'Ain-etīny, which is much nearer Ma'lula.

Possibly they may have been more closely affiliated to Ma'lula, by intermarriage, trade, &c.

Since writing the above I have paid a visit to Damascus, for the purpose of verifying the notes taken in Ma'lula upon its dialect. To these notes I have made such additions as will enable me to present a brief sketch of the language. Writing in Beirût I have no access to any large library. Nöldeke, in 1862, published a brief treatise on the Anti-Libanus-Aramaic, which I have not seen. I learn from Burton and Drake's "Unexplored Syria" (London, 1872), that Dr. Socin spent two months in Ma'lula studying the dialect. If he has published anything I have not seen it. In the "Unexplored Syria" (vol. ii, pp. 264–271), there is a short description of Ma'lula, with lists of skulls and bones found there, and a list of a dozen or more words of the dialect.

The ovens in the Christian quarter of Damascus are, as a rule, worked by Ma'lulites, who are looked upon as quite a distinct class of people. They have a name for shrewdness. The bread boys are notably sharp and mischievous, as well as profane. At one of the ovens I found Machoîl, the boy who had been my teacher at Ma'lula. I employed him again, because he had a rare faculty of answering questions, giving neither more nor less than what was asked. The Ma'lula dialect is not written, and very few of the villagers read and write Arabic. Hence a sharp boy whom one could keep to the point made the best teacher.

I transliterate words of the dialect into Latin characters for three reasons: 1st, as I have just noticed, the people do not write it themselves; 2nd, some letters have peculiar sounds; 3rd, many words are almost pure Arabic.

ܒ (*beth*) is sometimes hard like our B, but is often pronounced like P, eg. *ob*, father, *ippai* = my father. *Dhappopa* = fly. This difference is observed to-day in the Oriental pronunciation of the classic Syriac.

ܓ (*Gomal*) (1) like a softened Arabic غ or a thick Parisian R; (2) like the soft Arabic ج in *'aja* why; also in *sejratha* tree, and *thelja* snow, both of which are very near the Arabic.

ܕ (dolath) like TH in that—as in Dhemsek (Damascus). Also like T; ex. *Blota*, town, &c. The relative ܕ is pronounced t.

The hard sound of D appears rarely; ex. *Mdîntcha*, city.

ܚ (cheth) is like the Arabic ح

But the خ sound occurs *kharufa*, sheep; *khuttuma*, servant, and some other Arabic words.

ܟ (Koph) is like *ch* in the Scottish *loch*, ex. *chathoba* = *book*. It also has the hard c sound in many Arabic words, and in the Syriac *dhuctha* = *place*; *malca* = king, &c.

ܥ (Ee) is usually like the Arabic ع But I noticed the غ sound *ghubura* = dust, and *Shoghala* = work, which are near the Arabi forms.

ܦ (Pe) is like the Arabic ف F.

ܩ (Qoph) loses its guttural sound, and is pronounced like simple K.

ܫ (Shin) is *Sh*. The *S* sound occurs, but seems usually traceable to an Arabic ص Sad, or Syriac ܤ Notice, however, Sejratha, (Arabic س).

ܬ (tau) is like TH in *thin*, eg. *ichthab* = he writes. It also has the sound of TCH as in the English word *hutch*, ex. *hatch* = thou.

In some words derived from the Arabic the T sound occurs.

In my transliteration the following letters and combinations have the following values :—

SH, as in *shop*, representing shin.
TCH, as in *hutch* „ one sound of tau.
TH, as in *thin* „ another sound of tau.
GH, sounded like Ar. غ representing gomal.
CH, as in Scottish *loch* „ soft koph.
C „ *cat*, representing hard koph.
K (no guttural) „ qoph.
Ḥ, representing aspirate cheth.
KH „ rough cheth.
DH, as in *that*, representing dolath.
T represents soft sound of dolath.
Ṭ „ teth.
' „ ee.

In words plainly borrowed from the Arabic *t* also represents ت

The influence of the Arabic on the dialect has been great. Without pretending to mention all the indications of this influence, I name a few particulars :—

1. The structure of sentences in the Ma'lula dialect follows closely that of the common Arabic. Connectives have been transferred bodily. Further on I give an example of narrative which illustrates this.

2. Many words are plainly borrowed from the Arabic, but these are usually given a Syriac termination, and altered in pronunciation, and sometimes in accent. (Some words, however, are unaltered.)

Furshta (bed), Arabic, فرشة
Durba (road) „ درب
'Aiba (shame) „ عيب
Tchuchtcha (bedstead), Arabic, تخت

3. The adjective in comparison undergoes internal changes as in Arabic.

Korsa (cold), *akras* (colder), *iḥil* (sweet), *aḥla* (sweeter).

4. Salutations, complimentary phrases, proverbs, &c., &c., are generally Arabic, with slight accommodation to the Syriac pronunciation and accent.

5. The unclassical Arabic auxiliary expressions, *beddi*, *beddu*, &c. joined with the verb to express desire, and *'am*, to express continuous action in the present, have been transferred as in the phrases *betnidhmuch* = I wish to sleep; *bennīchul* = I wish to eat; *'annochil* = I am eating; *'amshoth* = I am drinking.

NOUNS.—Masculine nouns usually end in *â*, and accent the penultimate. They form their plural in ô, which takes the accent: Chêfa (stone), chêfo; ḥsonâ (horse), ḥsanô; bsonâ (child), bsînô. In the last two examples note the modification of the root-vowel.

Feminine nouns usually end in *tha*, and form their plural in *iotha*; bisnîtha (girl), bsiniotha; shunîtha (woman), shuniotha; baitha (house), baithiotha, where the *th* as a sign of the feminine appears in the plural.

M'artha (cave) has the plural M'arô, and chowcabtha (star) the plural chowc-bô.

The pronominal suffixes are as follows:—

1. For masculine nouns—

Singular, ḥsôna (horse).

1st (my horse), ḥsôn.	1st (our), ḥsonaḥ.
2nd masc. (thy), ḥsônach.	2nd masc. (your), ḥsônchun.
2nd fem. (thy), ḥsônish.	2nd fem. (your), ḥsonchin.
3rd masc. (his), ḥsônî.	3rd masc. (their), ḥsonun.
3rd fem. (has), ḥsonâ.	3rd fem. (their), ḥsonin.

Plural, ḥsanô (horses).

1st (my horses), ḥsanoi.	1st (our), ḥsanênaḥ.
2nd masc. (thy), ḥsanoch.	2nd masc. (your), ḥsanêchun.
2nd fem. (thy), ḥsanosh.	2nd fem. (your), ḥsanêchin.
3rd masc. (his), ḥsanoi.	3rd masc. (their), ḥsanêhun.
3rd fem. (her), ḥsanoya.	3rd fem. (their), ḥsanêhin.

Note.—The vowel ê in ḥsanênaḥ, &c., approximates in sound to the diphthong *ai*.

2. For feminine nouns—

Singular: Baitha (house), baith or baitha (my house), baithach (thy house), baithish (thy house), fem., &c., &c., like the suffixes of the sing. masc. noun.

The *plural*, baithiotha, also takes the singular suffixes: baithioth (my houses), baithiothach (thy houses), baithiothaḥ (our houses), &c., &c.

The noun *ob* (father) takes peculiar suffixes.

Sing. Suffixes.	*Plural Suffixes.*
1st, ippai (my father).	1st, abunaḥ (our).
2nd masc., obuch.	2nd masc., abuchun.
2nd fem., obush.	2nd fem., abuchin.
3rd masc., obu.	3rd masc., abuhun.
3rd fem., obu.	3rd fem., abuhin.

In these various suffixes may be observed—(1) classical Syriac forms as *och* (which, however, attaches itself to a plural rather than a singular noun); (2) an Arabic suffix (with the ث pronounced soft) in ḥsonach; (3) some peculiar forms, as in ḥsonish, ḥsonaḥ, &c.

I add a short list of common nouns for comparison with the classical and Arabic forms :—

Raisha	= head.	Cilmtha	= word.
'Aina	= eye.	Shimsha	= sun.
Reghra	= foot.	Nura	= fire.
Furshta	= bed.	Tchuchtcha	= bedstead.
Bisra	= meat.	Sahara	= moon.
Sejratha	= tree.	Dhuctha	= place.
Hwoya	= air.	Ḥona	= brother.
Ḥoth	= sister.	Bshola	= cooked food.
Ar'a	= ground.	Thelja	= snow.
Shoptha	= week.	Shmo	= heaven.
'Afra	= earth.	Ghubura	= dust.
Chathoba	= book.	Safrona	= bird.
Shenna	= rock.	Ghanna	= garden.
Ghubelcha	= cheese.	Durba	= road.
Sara	= hair.	Chsuru	= wood.
Mdîntcha	= city.	Yarha	= month.

PRONOUNS.

The *personal pronouns* are as follows :—

1st sing., Ana = I.
2nd masc., Hatch or hatchi = thou.
2nd fem., Hash or hashi = thou.
3rd masc., Hû.
3rd fem., Hî.
1st plural, Anaḥ = we.
2nd masc., Hatchchun = you.
2nd fem., Hatchchin = you.
3rd masc., Hin or hinnun = they.

Demonstrative Pronouns.

Masc. Hanna = this. *Fem.* Hodh or ho = this.
Masc. Hothi = that. *Fem.* Hotha = that.
Plu. Hathin = those.
Relative.—The classical ذ appears but is pronounced t.

The interrogatives are *mon* = who, and *mo* = what

The Numerals to Ten.

1. Aḥadh.	6. Shitcha.
2. Ithr.	7. Shob'a.
3. Thlotha.	8. Thmonya.
4. Urba'.	9. Tish'a.
5. Ḥamsha.	10. 'Asra.

VERBS.—The regular strong verb is inflected as follows :—

Ichthab = he wrote. Idhmich = he slept.

Preterite.

3rd masc. sing.,	Ichthab	Idhmich, or -michli.
3rd fem. „	Chathbath	Dhimchath.
2nd masc. „	Chathbitch	Dhimchitch.
2nd fem. „	Chathbish	Dhimchish.
1st c. „	Chathbith	Dhimchith.
3rd c. plu.,	Ichthab	Idhmich.
2nd masc. plu.,	Chathbitchchun	Dhimchitchchun.
2nd fem. „	Chathbitchchin	Dhimchitchchin.
1st c. „	Chathbinnaḥ	Dhimchinnaḥ.

The 2nd masc., 2nd fem., and 1st c. plural, seem to be formed by adding the pronouns *hatchchun*, *hatchchin*, and *anaḥ* to the root with little change. The 2nd pers. pronouns, *hatchi* and *hashi*, may be traced perhaps, but less clearly, in the 2nd sing. verbal forms. The other forms vary little from the classic, 3rd sing. and 3rd plural being pronounced alike. Note, however, the prosthetic vowel which almost always occurs in the 3rd person. I have noticed one exception : *raḥm*, *he loved*, instead of *irḥam*. Note also the alternative form, *idhmichli*.

The *present and future* are generally expressed by forms based on the participle ; the preformatives of *n* and *tch* may be explained as traces of *ana*, *anaḥ*, *hatchi*, &c., hurriedly repeated and then assimilated to the participle.

Singular, rôchib (*he rides*).	*Plural.*
3rd masc., rôchib.	3rd masc., rochbin.
3rd fem., rôchba.	3rd fem., rochban.
2nd masc., tchrochib.	2nd masc., tchrochbin.
2nd fem., tchrochba.	2nd fem., tchrochban.
1st c., n-rochib.	1st c., n-rochbin.

In subordinate clauses, as of purpose, &c., we find traces of the regular future (or imperfect) tense, as *zelli yidhmuch* (he went that he might sleep). The phrase *bettu yichthub* (he wishes to write) follows a colloquial Arabic idiom :—

Sing., 3rd masc., bettu yichthub.
„ 3rd fem., bet'ta tchichthub.
„ 2nd masc., bettach „
„ 2nd fem., bettish „
„ 1st c., bennichthub.
Plu., 3rd masc., bettûn y-chuthbun.
„ 3rd fem., „ y-chuthban.
„ 2nd masc., betchun tch-chuthbun.
„ 2nd fem., „ tch-chuthban.
„ 1st c., bettaḥ nichthub.

Note.—There is no trace of the *n* preformative in the 3rd masc. peculiar to the classic Syriac. It occurs instead in the 1st sing. and plu. The *y* preformative, foreign to the classic Syriac, occurs in 3rd pers. sing. and plu.

The imperative is :—

2nd masc. rchab ; 2nd f. irchab ; 2nd plural, ruchbun.

I did not hear an infinitive used. The verbal noun *riding* is *ruchb-tha*. I give suffixes of Iktal and Kutlith, 3rd and 1st pers. sing. of preterite.

	Iktal.	Kutlith.
Suf. 1st sing.	Kutal (he killed me)—	
„ 2nd s.m.	Kutlach.	Kutlitchach.
„ 2nd s.f.	Kutlish.	Kutlitchish.
„ 3rd s.m.	Kutli.	Kutlitchi.
„ 3rd s.f.	Kutl'a.	Kutlitcha.
„ 1st plu.	Kutlennaḥ.	
„ 2nd pl. m.	Kutlanchun.	Kutlitchchun.
„ 2nd pl. f.	Kutlanchin.	Kutlitchchin.
„ 3rd pl. m	Kutlan.	Kutlitchun.
„ 3rd pl. f.	„	Kutlitchin.

Another way is to use *lomadh*, ex. *Inchus*, he butchered ; with suffixes—nachisil, nachislach, nachislash, nachisli, &c., &c.

Kotîl (participial present), with suffixes : *katelli*, killing him ; *katella*, killing her ; *katîl*, killing me ; *katellach*, killing thee, &c. And so

the other forms as n-kotil (I am killing), n-katelli, n-katellach, n-katellish &c., &c.

The passive In-ktal has the endings of the active preterite: In-ktal, inkutlath, inkutlitch, inkutlith, &c., &c.

The intensive. Bukkar, to know; Preterite, bukkar, bukrath, bukritch, bukrish, &c. &c.

The future (clearly based on the participle with *m*), mbukkar, mbukra tch-mbukkar, n-mbukkar, &c.

The *Pe Nun* verb *Inchus*, he killed, does not lose the *nun* in any part, but is inflected like the strong verb. Inchus, nachsath, nachsitch, &c.; *fut.* nochis, tchnochis, &c.; *imper.* n-chas.

The *Pe olaf* verb *achal* (he ate), *Pret.* achal, achlath, achlitch, &c.; *fut.* ôchil, ôchla, tchôchil, nôchil, &c.; *Imper.* 2*nd m.*, chôl; 2*nd f.*, achûl; 2*nd m. pl.*, uchlun; 2*nd f. pl.*, uchlin, *I wish to eat* = bennîchul.

Ilif (both vowels short) may be a *Pe olaph*, or a *pe yudh* verb (classic).

Pret. ilif, ilfath, ilfitch, &c., &c.; *fut.* lôif, lôifa, tchlôif, nlôif, &c.

Ailif, to teach, is the causative form; *Pret.* ailif, ailfath, &c.; *fut.* mailif, mailfa, tchmailif, &c., &c.

I wish to learn = betnîlaf.
He wishes to learn = betti yîlaf.
I wish to teach = betnêilaf.
He wishes to learn = betti yêilaf.

Similar to this verb is *irib*, he grew great. *Pret.* irib, irbath, &c.; *fut.* roib, tch-roib, n-roib, &c.—

He wishes to increase = betti yîrub.
I wish „ „ = betnîrub.

The verb *ap* he gave, is the classic ܐܦ
Pret. ap, appath, appitch, &c.
Fut. map, mapya, tchmap, tchmapya, n-map, &c.
Imper. appa, *fem.* appai; *pl.* appun, appin.
Ap, with suffixes of the indirect object:

Suf.	1st sing.	c.,	appîl or applîl	= he gave	me.
„	2nd „	m.,	appêch or applêch	= „	thee.
„	„ „	f.,	appish or applish	= „	thee.
„	3rd „	m.,	appêli or applêli	= „	him.
„	„ „	f.,	appêla or applêla	= „	her.
„	1st pl.	c.,	appêh	= „	us.
„	2nd pl.	m.,	appêlchun	= „	you.
„	„ „	f.,	appelchin	= „	you.
„	3rd „	m.,	appêlun	= „	them.
„	„ „	f.,	appêlin	= „	them.

The forms with and without lomadh seem to be used indifferently.

Other suffixes are: I gave him = applilli; I gave her = applella; I gave thee = applillach; she gave him = applelli; thou gavest him = applitchli; they gave him = appulli; you gave him = aptchulli; we gave him = apnahli.

Map, with indirect object: mappîl, mapêch, mapîsh, mapêli, mapêla, mappêh, mappêlun, &c., &c.

The causative is *owpil*, to deliver—*l* is used as an auxiliary letter apparently.

Pret. owpil, owplath, owplitch, &c.

Fut. mowpil, mowpla, tchmowpil, &c.

Imper. owpil, owplun.

Note the trace of yudh, lost in the peal form.

Ee vau verb.—Akam (note the prosthetic vowel) is inflected: Akam, komath, komitch, &c.; *plural* akam, komitchchun, &c.

Fut. koim, koima, tchkoim, &c.

Imper. Sing. masc. kôm, *fem.* kûm. *Plu. masc.* kumôn, *fem.* kuman.

Lomadh Olaph verbs.—Ishtch—he drank—is inflected.

Pret. Ishtch, ishtchath, ishtchitch, &c.

Fut. Shoth, shothya, tchoth, &c.; *plu.* shothin, shothan, tchothun, tchothyan, n-shothin.

Note how in *tchoth*, sh disappears before the preformative tch.

Imper. mas. Ishtcha or shtcha; *fem.* stchai; *plural* Ishtschôn or shtchôn; *fem.* shtchîn.

Ihim, he saw.

Pret. Ihim, ihmath, ihmitch, &c.; *plu.* ihim, hmitchchun, hminnah, &c.

Fut. Hom, homya, tchhom, &c.

Imper. masc. Ihma, *fem.* hmai, *plu.* ihmun, *fem.* ihmin.

Ihim, with suffixes:—

Himni	= he saw him.	h-mânun	= he saw them.
Himna	= „ her.	h-menchun	= „ you.
Himnach	= „ thee.	h-mennah	= „ us.

Hom, with suffixes:—

hamîl	= seeing me.	hameh	= seeing us.
hamêch	= „ thee.	&c.	&c.
hamîsh	= „ thee (f.).	&c.	&c.
hameli	= „ him.		
hamêla	= „ her.		

If (to bake), Hebrew אפה, is both Pe olaph and lomadh olaph.

Pret. îf, ifath, &c. *Fut.* ôf, tchôf, nôf, &c. *Imper. masc.* ifa; *fem.* ifai; *plu. masc.* funin; *fem.* fînu.

In all these verbs the final radical disappears (except, perhaps, in forms homya, hmai, &c.), and the regular endings attach themselves to the second radicals.

There is a group of verbs which have peculiar terminations: tholi he came; zelli he went; and k'oli, he sat (*i.e.*, sat as a servant, served). The first two are evidently the classic ﺗﻠﻰ and ﺯﻟﻰ, with an auxiliary lomadh appearing in some forms. K'oli seems to belong to the same class.

Preterite.

3rd sing., masc.,	Tholi.	Zelli.	K'oli.
„ „ fem.,	Thalla.	Zlella.	K'alla.
2nd „ m.,	Thitchlach.	Zlitchlach.	K'itchlach.
„ „ f.,	Thishlish.	Zlishlish.	K'ishlish.
1st „ c.,	Thîl.	Zlîl.	K'îl.
3rd, plu., masc,	Tholun.	Zellun.	K'olun.
„ „ f.,	Tholin.	Zellin.	K'olin.
2nd „ m.,	Thitchchun.	Zlitchun.	K'itchchun.
„ „ f.,	Thitchchin.	Zlitchchin.	K'itchchin.
1st „ c.,	Thinnaḥ.	Zlinnaḥ.	K'innaḥ.

Future.

3rd sing., m.,	Thêli.	Zelli.	K'elli.
„ „ f.,	Thiola.	Zlola.	K'iola.
2nd „ m.,	Tchthêch.	Zellach.	Tchk'êch.
„ „ f.,	Tchthiosh.	Tchzlush.	Tchk'iosh.
1st „ c.,	N-thil.	Nzil.	N-k'il.
3rd plu., m.,	Thyillun.	Zlillun.	K'illun.
„ „ f.,	Thyillin.	Zlellin.	K'illun.
2nd plu., m.,	Tchthilchun.	Tchzlilchun.	Tchkai'ilchun.
„ „ f.,	Tchthilchin.	„ in.	„ in.
1st „ c.,	N-thyillaḥ.	N-zillaḥ.	N-kai'illaḥ.

Imper.

2nd sing., m.,	Thoch.	Zêch.	K'ach.
„ „ f.,	Thosh.	Zîsh or Zellish.	K'ash.
„ plu. m.,	Thalchun.	Zlelchun.	K'elchun.
„ „ f.,	Thalchin.	„ in.	K'elchin.

The endings of these verbs in the pret. and fut. sing. and imp. sing. bear a strong resemblance to the pronominal suffixes attached to verbs, nouns, and the preposition lomadh. Only in the plural do the forms resemble those of the ordinary strong verb.

Notice here the resemblance of some of the forms to the strong classical imperative with the "ethical dative" with *lomadh*, ﺍﻗﺘﻞ ﻟﻲ, (zel loch), ﺍﻗﺘﻠﻪ ﻟﻪ, ﺍﻗﺘﻠﻬﺎ ﻟﻬﺎ; also ﺍﻗﺘﻞ ﻟﻪ (tho loch) ﺍﻗﺘﻠﻪ.

לוֹ כְּחַם, &c. It seems as if an inflection, in preterite and future, had been built by analogy upon these imp. forms with *l*.

The verb *to be* (corresponding in use to the Arabic كَانَ) is wob.

(*WOB*) *Preterite.*

3rd sing. m., wob.		3rd plu. m., waibîn.	
,, ,, f., waiba.		,, ,, f., waiban.	
2nd ,, m., tchob or tchobi.		2nd ,, m., utchibín.	
,, ,, f., ushîba.		,, ,, f., utchiban.	
1st ,, m., unob or nob.		1st ,, m., unibîn.	
,, ,, f., unîba.		,, ,, f., uniban.	

Future.

3rd sing. m., ob or yîbtchob.		3rd plu. m., aibûn.	
,, ,, f., tchib.		,, ,, f., aiban.	
2nd ,, m., tchib.		2nd ,, m., tchibîn.	
,, ,, f., tchiba.		,, ,, f., tchiban.	
1st ,, c., unob or nob.		1st ,, c., nibîn.	

This inflection may possibly be based upon a combination of the verb יֹסִי and the preposition בְּ (beth). The colloquial Arabic expression FÎ signifies (like wob) *there is;* FINI comes to mean *it is in me* or *I can;* FIK, *it is in you* or *you can.* Some such use might explain the form *wob*, and the other forms might be accounted for if we regard *wob* as taken as a root, given feminine and plural terminations as in *waiba*, *waibîn*, and *waiban*, and combined with pronominal fragments as in tchob, utchibin, and unob.

There is is also expressed by ûth; there is not = tchûth.

There was is *woth.*

He became is *ithcan*, inflicted thicnath, thicnitch, &c.

Fut. thocan, n-thocan, &c.

The preposition לְ (lomdah) takes its suffixes thus :—

1*st sing.*, lîl; 2*nd sing.* masc., lêch; 2*nd sing. fem.*, lîsh; 3*rd sing. masc.*, lêli; 3*rd sing. fem.*, lêla; 1*st pl.*, leah; 2*nd pl. masc.*, lêlchun; 2nd pl. fem., lêlchin; 3rd pl. masc., lêlun; 3rd pl. fem., lêlin.

The preposition lomadh is used in such phrases as: *mor il baitha*, the master of the house; *Ob il Machoil*, Michael's father.

A few adverbs, particles, &c. :—

Hosh	= now.	Lina	= where?
Il'il	= up.	Emma	= where?
Ira'	= down.	Hannuc	= where?
Imodh	= to-day.	Ikdhum	= before (conj.).
Rumish	= yesterday.		
Imhar	= to-morrow.	Aja'	= why?
Bothar	= after (prep.).	Tchu	= not.

Kayyam	= after (conj.).	Hutta	= in order that.
Hocha	= here.		
Dhuk or dhikli	= when.	Laow or Izzatchob	= if.

I add a Ma'lula-Syriac rendering of the parable of the Prodigal Son. The Ma'lula baker-boy, Machoil, like most of his fellow-townsmen, can neither read nor write, and does not easily follow "high Arabic." However, I repeated the parable to him in Arabic, simple, but as nearly equivalent to the original Syriac as possible. He gave me, bit by bit, the following translation. Later, by the aid of an oil lamp in the dark gloomy oven, I read the parable as given by him, to some Ma'lula men and boys, who easily re-translated it into Arabic.

Hence it will give a fair idea of the Ma'lula style of narrative.

Luke xv, 11–32.

11. Woth ghabrona ilê ithr ibr. 12. Z'ora amel lobu. Ya ippai applîl kusmthi m-molach. Iksam lêlun 'ishtchi. 13. Bothar yoma kalil, ajma' ibri z'ora chullemet, u-zelli 'a blato bhîdha, u-ilhil rowḥ il moli musrif bahar. 14. Dhuki rowwaḥ chullemet t-ghappi, ithcin chufna bahar bathin blato, u-ithcin muhtchaj. 15. U-zelli u-k'oli ghap laḥadh marôil lathin blato, u-owpli l-bistchano yir'al l-hzîro. 16. U-bettu yimlel ghowwi mnenna khurnûb t-uchlilli ḥ-zîro. La bernash appêli mit. 17. Dhukkil 'owwit l-nephshi omar; uchma aghîr ghap lippai t-ghappai lehma zayyit, u-ana hocha ahl-cith mchufna. 18. N-kônzil la' lippai, u-namelli, ya ippai, ukhtith lishmo u-kommach. 19. U-lophash il fristcha ḥutta tchemmin ibrach. Shûn uchtaḥadh min aghiroch. 20. Akam, zelli la'lobu. Dhukkil wob ba'idh ḥemni obu, tchhannan 'alê, arhit u-iskat 'a kdholi, u-neshki. 21. U-amelli ibri, ya ippai ukhtith l-shmo u-kommach, u-lophash il fristcha ḥutta tchemmin ibrach. 22. Omar obu laghirô, Aithûn chusso t-aḥsin u-chuslulli, arnhun khotchuna b-îdhi, u-surmoytha b-rughri. 23. Aithun 'akkusha ma'lufa u-nuchsunni, u-nochlin u-niḥodhin. 24. Hanna ibr wob imith u hosh aytib, wob dhayya u-iltchki. U-abbit ḥodhin. 25. Ibri rappa wob b-hokla; u dhuki tholi u-akrib il baitha ishmi' ḥessa nowbtha u-reghdha. 26. U-iz'ak 'a laḥadh m-naghiro, u-sha'li; mo ôth. 27. U-amelli, Honach tholi, u-obuch inchas 'akkusha ma'lufa, akbli bisslomtcha. 28. U-aghdhib, u-la sob ya'bur; u-infik obu y-tulpenni. 29. U-jowwibi u-amel lobu; ana mukhtemlach chullan ishno, u lîmodh la chulifitchach m-mit. B-ômrach lappitchil ghudhya ḥutta niḥidh 'amlistikoi. 30. Lacawn dhuki tholi hanna ibrach t-rowwaḥ il moli ḥarîma t-zônyan nachsitchlêli 'akkusha ma'lufa. 31. U-amelli, ya ibr, hatch 'im chullan yomo, u-chutilîl lech. 32. Wob wojib 'alênaḥ niḥidh u nimbsut; ḥonach hanna wob imith u-iḥ, u-wob dhayya u-iltchki.

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Beirût, Syria.

November 19*th*, 1889.

Notes 11.—*Woth* = there was. *Ilê* to him. 12. *Amel lobu*, from amr, to say; r changed to l before l in *lobu* = to his father. *Ya* = O, common

Arabic mode of address. *Applîl* = give me; *appa* is give. *Kusmthi m-molach*, the Arabic roots are used, my share of thy property. 13. *Bothur yoma kalil*; another expression is *bothar uchma yom*, after some days. *Chullemet* *i.e.*, كُلّ مُدّة. *Blatô*, plural form used for *district*; the sing., *Blota* signifies *a town*. *Ilhîl* = there; *il moli* = the property, a use of the Arabic article. *Musrif* (Arabic) *bahar* = great expenditure, the simple dialect fails to express the "*riotous living*" better than this. 14. *Rowwaḥ*, we have had the form *rowḥ* with just the same meaning—an illustration of the flexibility of form we find in many words which lengthen or shorten as the rhythm of the sentence may demand. For *when* we have *dhuk*, *dhuki*, *dhukkil*, *dhukli*, the form depending on the first letter of the next word as well as rhythm. *T-ghappi* = which he had; it is the classical ع; I find no trace of it as a preposition; *ghap* is *with* denoting possession, &c. 15. *K'oli . . . blato* = "served at the house of one of the masters of that land." Observe the redundant use of the l. *Lathin* = *l-hathin*; *owpli* = sent him, *owpil*—aphel from *ap*. *Yir'al* we have noticed the y preformative in clauses of purpose. 16. *Mnenna*, from those; *t-uchlilli h-ziro*, which the swine eat (them). From achal w. suffix. *Bernash* = בַּרְנָשׁ; mit = מִדְמִי. *'owwit*, the Arabic عاود *ghap lippai* = at my father's, redundant; *t-ghappai*, who have, lit. who with them. 18. *N-kônzil*, I will arise and go, a compound. The kônzellah! let us be off! is very common; *la'lippai*, very redundant; *namelli*, r lost or assimilated w. l of suffix. 19. *Lophash il fristcha* = there is no longer to me the right. *Ḥutta tchemmin* = that thou shouldst call me. 20. *Akum zelli*, he arose (and) went; conjunctions are often omitted; *ḥemni* = *iḥm* with suffix. The Chaldaic חמא equivalent to Clas. Syriac ܫܢ *tchannan 'alê* = *Arabic; Arhit* = he ran. 22. *Aithun*, imper. from *Aith*, causative of *tholi*, the fut. (part. form) is maith, *t-aḥsin* = which (is) the best. *Chuslulli* = dress him. *Surmoytha* = Arabic صرماية. 23. *Ma'lufa* = Arabic — معلوف *nuchsunni*, imper. from inchas, with suffix. 24. *Hanna ibr* = this my son. *Hosh* = now. *Iltchki Ar* = التقى *Abbit ḥodhin*, they began to be merry; use of participle 25. *Akrib il baitha*, drew near *to* the house, *il* being probably the prep., with prosthetic vowel rather than a borrowed Arabic article. *Ḥessa* = Arabic حس 26. *Sha'li* Hebrew = שאל, Syriac = ܫܐܠ; the Ma'lulites insert an *ee* in place of *olaph*. *Mo oth* = what is this? They also say, *mo hanna*. 27. *Akbli*, &c., I could get no word for *because* (he has received &c.); such connections are seldom used. 28. *La sob ya'bur* = he did not wish to enter, *y-ṭulpenni* = that he might intreat him; Arabic = بطلبوا 29. *Mukhtemlach*, part. with suffix; Arabic root = خادم *Chullan ishno* = all these years; *limodh*, to this day; *la chulifitchach*, I have cost thee nothing. *i.e.*, no trouble. *Arabic* كلفتك *m-mit*, in anything or of anything; *b-ômrach* = "in thy days," *i.e.*, never; *lappitchil* = thou hast not given me; *'amlistikoi* = 'am-listikoi, together with my friends. Arabic = اصدقاء. 30. *Lacawn* = but, however; *ḥarîma t-zonyan* = women who (are) harlots; *Nach*·

sitch-leli = thou hast killed for him. 31. *Hatch'im* = thou (art) with me; *chutilil* = *chul-t-lil* = all which (is) to me, all that I have. 32. *Wojib 'alénah*, Arabic واجب علينا

Since my completion of this article Dr. Van Dyck has called my attention to the book درّة الغواص في اوهام الخواص by الحريري where reference is made to some changes of consonants, &c., similar to what we find in the Ma'lula dialect. The كشكشة ربيعة (an Arab tribe) is changing the كاف الوقف to شين; as مابش for مابك; and sometimes the كاف, which is not the كاف الوقف, is changed to ش, as in و جيدش جيدها عيناش عيناها.

Change of hamzeh to ع is also mentioned as in أعن توسمت for ءأن توسمت.

In Bethlehem, and among some Bedouins, to-day ك is pronounced like TCH. In Nazareth ق loses its guttural force. The Nuseiryeh, near Sofita, say هِنْت instead of إنْت, for the 2nd. pers. sing. of the pronoun.

F. J. B.

ESSAYS ON THE SECTS AND NATIONALITIES OF SYRIA AND PALESTINE.

Essay I, Introduction.

By Rev. George E. Post, M.A., M.D., F.L.S.

The Physical Features, Climate, Soil, Water Supply, Natural History, and Health of Syria and Palestine.

I.—*Physical Features.*

It is not the object of the present essay to present an exhaustive view of the topics enumerated in the title, but to show their bearing on the march of population in these lands, and the preservation of the races now represented, as well as the origination and destruction of those which have been represented in the past.

No country of equal size contains so strange an aggregate of heterogeneous elements, such a medley of irreconcilable sects and races, as the

one which we are to pass in review. No country has been so scourged by war, so often trampled under foot and ruined, and yet it has never long been without a considerable population, often a very dense one. No other country has retained such distinct and strongly marked traces of the vicissitudes of its history. None is so complete a microcosm in the variety of types of civilisation and barbarism. To attempt to account for these strongly marked peculiarities simply from history will lead only to partial and one-sided results. It will be our purpose to show how, under the guidance of an unerring providence, the physical features, climate, soil, water supply, natural history, and health of Syria and Palestine, have influenced the population, history, and physical, moral, and religious characteristics of the people.

The insular character, the sinuous coast, the geographical position, and the great mineral and agricultural resources of Great Britain have had a large share in making it the great commercial and naval power of Europe. The lofty mountains, and inaccessible fastnesses of Switzerland have nurtured that spirit of independence and love of liberty which have made that land so illustrious in the history of the world. But neither of these countries has owed more of its peculiar development to its physical features and surroundings than have Syria and Palestine.

Syria and Palestine present in a geographical area of, say 50,000 miles, more diversities and anomalies than any equal territory on the surface of the globe. In this territory is the deepest valley, 1,300 feet below the level of the sea. While its mountains are not as lofty as the Alps, their nearness to the sea gives them a relative elevation as striking, and, in a physical sense, as important. They are surrounded by deserts, with a line of demarcation almost abrupt.

There exists between parts of this territory, quite near to each other, the widest difference in isolation from or in connection with the rest of the eastern world. Thus the southern and eastern deserts are so isolated, that they have been, from time immemorial, inhabited by almost independent tribes of Arabs, whom Assyrian, Babylonian, Persian, Greek, Roman, Saracen, and Turkish power has striven in vain to subdue. Thus a prime factor in preserving a race, language, and customs has been the physical features of their country. Again the mountain fastnesses of the Nusairy range, and of Lebanon, have had a large share in the semi-independence of the tribes which inhabit them, and have made possible the continued existence without fusion of such sects as the Nusairiyeh, the Maronites, and the Druzes,. But inaccessibility is the exception and not the rule in this territory. The level strip of sea coast, with openings to the interior by the plains of Esdraëlon, Merj 'Ayun, 'Akkar, and Issus, has been a highway for the conquering armies of Egypt, Assyria, Babylon, Persia, Greece, Rome, Tartary, the Crusaders, Saracens, Turks, and French ; hence, while the hill countries and deserts have contributed to *preserve* fragments of the original races unaltered, the plains have invited the intrusion of new races, and produced a mixture, unparalled in the history of mankind. Canaanite, Hittite, Hebrew, Syrian, Arab, have become intermingled with

all the historic races of Europe, Asia, and Africa, even to the blue-eyed and flaxen-haired Dane and Norwegian. Syria and Palestine have been subdued and overwhelmed oftener than any other part of the world, and such seems to be their destiny until the entrance of a new order of things. Let us see how this has occurred.

Syria and Palestine, including the Sinaitic peninsula, form the geographical meeting point of the European, Asiatic, and African continents. For Asia Minor, although included by its sea coast in the Asiatic mass, is essentially southern European in its climate, productions, ethnology (with the exception of the modern Turkish graft), and its history.

The salient physical feature of the country is the two mountain ranges which intersect it from north to south, parallel to each other and the coast. Between the westernmost of these ranges and the Mediterranean Sea, is the narrow maritime plain of Philistia, Phœnicia, and 'Akkar. Between these two ranges is the table-land of Hamath, Hums, the lacustrine basin of Cœlesyria, and the sunken trough of the Jordan, Dead Sea, and the 'Arabah. Eastward of the easternmost range is the table-land of Moab, Gilead, Haurân, Damascus, and Aleppo, stretching eastward to the Syrian Desert, and northward to the Euphrates Valley.

So pronounced are these ridges, that they turn most of the principal rivers of the country into a north and south course, in the cleft between the two chains. Thus the Orontes, taking its rise in the valley of Cœlesyria, flows northward to a little north of the latitude of Antioch, and then breaks abruptly south-westward around the shoulders of the Nusairy and Cassius chain to the sea. The Leontes, rising near the Orontes, flows southward through the valley of Cœlesyria, and, a little north of Tyre, reaches the Mediterranean through the gap between Lebanon and Galilee. The Jordan, rising on the westward slopes of Hermon, flows southward in its strange chasm, to be lost in the Dead Sea. The waters of the Tîh flow northward, through the 'Arîsh, and those of the 'Arabah and Edom also northward, through the 'Arabah, to the Dead Sea. Only the lesser torrents flow westward by a more or less direct course to the Mediterranean, and the Barrada and 'Awaj eastward from Anti-Lebanon and Hermon to the Syrian Desert.

As before mentioned, the maritime plain opens by four broad depressions in the hill country to the interior plains. These great and easy highways have had a controlling influence on the destinies of the land. An army invading the Euphrates Valley from Egypt, or vice versâ, could march with ease along the coast to Acre, across Galilee by the plain of Esdraëlon and enter Haurân, whence there is hardly need to make roads to enable chariots, as well as horse and foot, to penetrate where they would to the northward. But the table-land of Haurân, Damascus, and Aleppo did not offer a more sure and safe road to an army, than did the Syrian desert hem it in from the east, and compel it to march northward or southward. Hence the great campaigns were always on north and south lines. The forces of Assyria and Babylonia made a wide detour to reach those of Egypt. No conqueror had the foolhardiness or the

resources to enable him to cross the Syrian desert to seek his foe. For this reason the kingdom of Palmyra, sequestered in the desert, was long safe from assault and conquest.

An invading army from Egypt might pass the plain of Esdraëlon, and enter Cœlesyria by the valley of the Leontes, or debouch around the southern or northern shoulder of Hermon into the Damascus plain. Or it might pass northward by the Phœnician plain to 'Akkar, and thence eastward to Hums, Hamath, and Aleppo. Or it might advance northward to the Orontes, and so penetrate to the interior. Campaigns along all of these lines were undertaken by the great military monarchies of northern Africa and Western Asia, and later of Europe. Many times these expeditions merely claimed a right of way, and seem to have interfered little or not at all with the inhabitants. At others they formed alliances with the peoples who lay on their line of march, and thus held open their own communications and line of retreat. But it could not be otherwise than that a land so accessible from every side should have been overrun and conquered by the fierce military monarchies at whose mercy they lay.

The inevitable result of the repeated conquests of the plains and more accessible mountains was to drive back the refugees into the fastnesses, and each wave of war which rolled upward left on retiring a fragment of some race or religion on the upper terraces, and in the secluded valleys of the mountains.

II.—*Climate and Meteorology.*

The physical features of the country, so exceedingly varied, and so important in their influence on political history and ethnology, exercise also a controlling influence over the climate and meteorology, which are more diversified than in any similar extent of territory on the globe.

As the great mountain chains determine the course of the rivers, so they determine the distribution of the rainfall. The Tîh and Sinai are under the dominion of the climatic laws which govern north-eastern Africa, and seldom have any considerable rainfall. The dry air of the Sahara, not passing on its way to these regions over any considerable body of water, remains dry, and hence, even the lofty mountains of Sinai do not often find moisture to precipitate, and whole winters may pass without a shower. But the winds that strike the coast range of Palestine and Syria are loaded with moisture in their passage over the Mediterranean, and this moisture is condensed and poured down in copious rains over the seaward slopes of this range, and the maritime plain. The rainfall increases as you pass from Southern Palestine to Lebanon, and probably attains its maximum under the alpine summits of Sunnîn and Makmel. The rainy season lasts from the middle or end of November to the end of March. There is a month of occasional showers before and after this season, but the heaviest rains of the year usually occur in the months of December, January and February.

As much of the moisture of the air is extracted in its passage over the maritime chain of mountains, there is a considerably reduced rainfall over

the central plains and the eastern chains. These chains extract still more of the moisture of the air, so that the rainfall of the eastern table-land is much smaller than that of the coast and adjacent hills. Thus, while the average rainfall of Beirût is about 35 inches, and that of the central zone of Lebanon probably from 50 to 55 inches, that of Damascus will hardly exceed 20 inches, and the amount diminishes as the distance eastward from the mountains increases. Those parts of the eastern table land which lie open to the heavily charged clouds coming from the west enjoy a greater rainfall and more fertility than those which are cut off by intervening mountains. Thus Haurân, which lies in the gap between the mountains of Gilead and Hermon, and is backed to the eastward by a high mountain chain, enjoys a heavy rainfall, and corresponding fertility. The same is true of the region about Hums and Hamath.

The heavily wooded chains of Cassius and Amanus attract moisture, and enjoy a longer rainy reason than southern Syria and Palestine, and have occasional showers even in midsummer.

The temperature of the different portions of our district depends on their altitude more than their latitude, and varies from the tropical heat of the Dead Sea Chasm, to the alpine temperature of the higher peaks of Lebanon and Anti-Lebanon. The average summer temperature of Beirût at 10 a.m. is about 84° F. in the shade. This would probably be a mean for the coast. But, owing to the low dew point, this temperature, in itself so moderate, seems much higher than it really is. At an altitude of 2,500 feet on Lebanon the average for the same season and hour is about 77° F. The air at this altitude is dry, and this temperature is, therefore, by no means oppressive. The temperature of the upper inhabited regions of Lebanon, the highest of which are 6,000 feet above the sea, is quite subalpine, and the winters are so severe that the better classes and many of the poorer people of Ehedin, near the Cedars, winter on the Tripoli plain. Snow covers the higher peaks during the winter months, and rests on their summits throughout the year.

On the other hand the temperature of the Jordan Valley is tropical. The thermometer ranges as high as 120° F. in the shade at Jericho in August. The harvests of this torrid depression mature a month or six weeks earlier than those of the sea-coast, and two to three months earlier than those of the hill country.

In speaking of the temperature in the shade in this land, we must not forget that it quite inadequately expresses the intense fervor of the direct rays of the sun, when no cloud intervenes to mitigate the heat. On the sea-coast the sun temperature often reaches 145° F., and sometimes over 150° F., and in the Jordan Valley and in the narrow gorges which debouche into the basin of the Dead Sea, the heat is blistering. One of these wadies is appropriately termed Wadi-en-Nâr, the Valley of Fire.

The temperature of the plateaux is subject to extremes of heat, and to bitter cold winds. It is not uncommon to have a summer heat of 95° to 100° F. in Hums and Aleppo, while storms almost like the blizzards of the western United States sweep over those boundless plains in winter.

All parts of the country are exposed to siroccos, which are the driest and most exhausting of all the winds of the country. During such winds the surface of the soil is parched and cracked, the covers of books become warped, doors snap with a sound like a pistol shot, the skin becomes dry, and the nervous system is at its highest tension. These siroccos prevail for the most part in the early spring, and are often followed by refreshing rains. They are most intolerable when they occur in mid-summer, and especially so on the great plains of the interior, where they seem like the blast of a furnace.

The rainy winds are usually from the south-west. Occasionally there is a shower from the north, and rarely from the east. But the heavy storms of winter always come up obliquely to the coast line, out of the Mediterranean.

The above particulars of the meteorology of the country denote a climate in the plains of a subtropical, and in the mountains and plateaux of a mild temperate character, with sufficient variety to cultivate strong contrasts of character, illustrated by the extremes of the effeminate inhabitants of the Jordan Valley, and the sturdy mountaineers of Alpine Lebanon. In general, the climate is one which is adapted to the existence of a large population. There being little need of fire for heating houses, the scarcity of fuel would not be felt. The long summers made it a matter of comparatively trifling cost to provide necessary clothing. From these two causes a larger population could exist than in a land where fuel and warm clothing are essential to existence. Again, the variety and range of temperature and rainfall have a most important bearing on the development of all the resources and capabilities of the country. Those plants which require moisture find it. Those which flourish best without it are also suited. Hence almost every foot of land not actually rock produces something directly or indirectly useful to man, and even the clefts of the rocks furnish pasture of no little value to sheep and goats.

III.—*Soil.*

The soil of the maritime plain is usually a fertile brown loam, with sandy reaches behind the prominent capes. That of the hill country of Palestine and Syria is also a brown loam mixed with the detritus of limestone rocks, usually thin, and, except where terraced, liable to be washed down by the torrents into the valleys. When terraced it yields a small harvest of the cereals, but is especially adapted to the fig, the mulberry, and the olive, and from 2,500 feet to 5,000 to the vine.

The soil of Cœlesyria is that of the bed of an ancient lake, a rich brown, and in places almost black loam, of inexhaustible fertility. Notwithstanding the primitive ploughs, which only scratch the soil, the rude method of sowing, and the failure to manure, this plain still furnishes luxuriant crops of wheat and maize, sesame, and sorghum. The only attempt at scientific agriculture is the rotation of the crops of maize and wheat. This, and leaving portions to lie fallow, seem to suffice to maintain a fertility which is immemorial.

The soil of the Jordan Valley and of the plain of Esdraëlon, and the lesser plains of the uplands of Palestine, resembles that of Cœlesyria in fertility and strength.

Eastward of the Jordan the soil of Moab is thin, and for the most part adapted to pasturage. The rolling park land of Gilead is partly wooded, and adapted only for forest growth, and partly a grazing country, as in the days of Reuben. Only a few favoured spots are specially adapted to the raising of wheat and other grain.

Haurân, El Leja, and the great plains which stretch away to the northward as far as Aleppo, are largely volcanic. The tufas and other products of the disintegration of the volcanic rock, furnish an exceedingly rich soil, specially adapted to the growth of wheat. Seven hundred camel loads of wheat are said to be carried daily to Acre during the season immediately following the wheat harvest of Haurân.

As a whole, Syria and Palestine, while containing much rocky and unproductive territory, are countries of great fertility and resources. But their fertility depends in a peculiar manner on the industry of man. The soil of the hills must be terraced, or it will be washed down their sides by the winter torrents ; it must be worked over to clear it of rocks and stones, or it will not give good nourishment to the plants and trees which it bears. But given a carefully-prepared soil, and sufficient water, and there seems no limit to the agricultural possibilities of this land of fertilising sunshine. Water, however, is a *sine quâ non*, and as the season of rain is limited, it was necessary that there should be a provision for the storage and distribution of water over all the country, through the dry as well as the wet season.

IV.—*The Water Supply.*

Few countries have a more admirable provision for the collection, storage, and distribution of water than Syria and Palestine. The limestone rocks which constitute the greater part of the mountain chains have numerous and very extensive caverns, which are natural cisterns for the storage of the surface water which percolates into them through the fissures of the overlying strata. In the centre of the north and south mountain-chains rise the lofty ranges of Lebanon and Anti-Lebanon, the summits of which are covered with snow during the winter, and carry the snow of one winter into the next. The summits of Jebel Sunnîn and Jebel Kenîseh, and parts of the chain above the Cedars, are so arranged as to collect and retain vast drifts of snow. The top of Sunnîn, for example, consists of a series of funnel-like depressions from 250 to 1,200 feet across, and from 100 to 250 feet deep. These become almost or quite filled with snow in mid-winter. From the bottoms of these funnel-like depressions there are channels leading down to the great caverns in the heart of the mountain mass, and through these channels the water which melts from the snow-drifts flows down to swell the

supply in the reservoirs, from which it breaks forth in perennial fountains at different levels down to the sea, and even under its surface. The top of Jebel Makmel is a broad plateau with transverse ridges across it, and between these ridges lie the snow-drifts, and into depressions of the plateau runs the water, to be lost in the mountain mass beneath, and then reappear in such streams as the Kadîsha, which springs forth, an ice-cold torrent, below the "Cedars of the Lord."

Similar store-houses of snow and water are found on the tops of the other peaks of Lebanon and Anti-Lebanon, and in their inmost recesses. The lake of Yamûni is drained by an underground channel, and perhaps reappears in the great fountain of Afka, which is about 400 feet lower, on the opposite side of Lebanon. In that case the underground stream must tunnel the entire breadth of the mountain chain at an elevation of over 4,000 feet.

The strata of the limestone chains are nearly horizontal, and there is abundant evidence that the water stored at the higher levels is distributed as follows: copious fountains burst forth at the base of the summit cones and ridges, as those of Neba'-el-Leben, Neba'-el-'Asal, Neba'-el-Hhadîd, the fountain of the Kadîsha, and many others: Another portion of the water percolates through the upper strata to other intramontane reservoirs at different lower levels, and is then conducted by the slightly dipping strata in channels between these strata, and breaks forth by side channels in fountains along the course of these rocky aqueducts. Nothing is more striking in travelling through Lebanon than to see from some commanding point of view the villages along both sides of a valley, like that of the Damûr, lying along horizontal lines, corresponding with the strata between which the fountains gush forth. In some cases these rocky aqueducts are many miles in length, and a single one manifestly acts as a water-main for a large number of villages. A few hundred feet below such a concealed watercourse will be another tier of villages, supplied by a second conduit, with its lateral channels to furnish the life-giving fluid to the fountains along its course.

There are also underground rivers flowing to great distances, and supplying fountains even to the level of the sea, or beneath its bed. In this way must be explained the large number of perennial springs which flow through the rainless months along the sides of the mountains of Palestine, and in the Nusairy chain, which have no snow-clad peaks to supply water through the seven months of summer. Doubtless there are many of these channels which work more or less on the syphon principle, and some of them give rise to intermittent fountains of a most interesting kind.

The capacity of the great storage and distributing reservoirs of the mountains may be inferred from the vast quantity of water which flows in the numerous streams of the country. The aggregate of the Orontes, the Leontes, the Jordan, the Barrada, the 'Awaj, the Kadîsha, the Dog River, and the Damûr, beside the numerous smaller streams, which flow into the Mediterranean, and the Dead Sea, and the Damascus plain, is

enormous. Much of this water is used for irrigation and never reaches the mouth of the stream. Many streams are wholly used in this way in summer. But, notwithstanding leakage, evaporation, and irrigation, a vast volume of water is poured out steadily through the long succession of rainless months; and if we add to this the fact that, by digging, copious supplies of potable water can be obtained almost anywhere on level ground, we shall gain a more adequate conception of the provision made for fertilising this land and supporting a large population.

The bearing of the fertility of the soil and the adequate supply of water for the wants of all whom the soil can feed, on the continuity of a large population in these lands through all the vicissitudes of the ages, is evident. A land in which the water supply is on the whole stable and certain, and the soil responds to the labourer's toil, is a land which will attract back again a population however it may have been "scattered and peeled." While there are irregularities in the amount of the rainfall there is seldom a water famine. The drought of summer is offset by the fact that the winter is a period of vegetable growth, not of sleep under a mantle of snow as in cooler climates, and that, with irrigation, two or more crops may be gathered in a year. It is still further offset by the fact that several of the staples of the country, as the mulberry, the vine, the olive, the fig, and the durrah, are independent of rain, except during its proper season, and there is a superabundance of water for all crops which require irrigation.

It is not, then, to be wondered at that a succession of wars, and desolations, and captivities, which would have ruined a less favoured land irreparably, as they have ruined Mesopotamia, large parts of Persia, and Northern Africa, have never for any long time prevented Syria and Palestine from having a considerable population. And while the country now supports far fewer people than it once did, and may do again, yet every year of peace multiplies its population, and it needs but the protection of a stable and just government to cause it once more to swarm with people "as the sands on the sea shore for multitude."

V.—*Natural History.*

The *Flora* of this land is the richest of any country of its size in the world. The great diversity of soil, climate, rainfall, sun exposure, elevation, and depression, gives opportunity for the growth of a large number of species and varieties. The flowering plants number over 3,000 species, distributed through 850 genera and 117 orders. Many of the genera have a large number of species. Thus, Ranunculus has 28, Silene 58, Trigonella 31, Trifolium 48, and Astragalus 115 species, and several other genera have from 30 to 60 species apiece.

Each district has its distinctive flora. The *maritime plain* has the palm, the sugar-cane, the colocasia, the banana, the orange, lemon, citron and mandarin orange, which characterize its gardens and fields. In the dunes on the coast grow a large number of plants which are only adapted

to the blown sand, and seem to be provided to prevent this sand from overwhelming the fertile land. In the warm, moist air of the coast plain most sub-tropical plants can be cultivated in the open air.

The *lower and middle zone of the mountains* is the favoured home of the mulberry, the fig, the olive (which also grows luxuriantly on the maritime plain), and the vine. Tree culture is the main industry of Lebanon, and a considerable one on the mountains of Palestine. The cereals grown in the mountains are insufficient for the support of the population, and cannot be rated as a staple of the district. The main reliance of Lebanon is the mulberry, which not only furnishes the food of the silkworm, but later that of the sheep and horned cattle.

Anti-Lebanon is far less fertile, and has far less inhabitants than Lebanon. Tree culture is less common, but there are far more forest trees here than in Lebanon. But at similar altitudes corresponding productions are raised.

The forest trees of the *middle mountain zone* are the Aleppo Pine, the Hackberry (*Celtis Australis*), three species of Maple, the Portuguese, Lebanon, evergreen, Vallonia, Cerris, and other Oaks, the Syrian Ash, the Juniper, the Cypress, the Styrax, the Arbutus (which attains the magnitude of a considerable tree in the park-like groves of Gilead), the Terebinth, and, in Northern Syria, the Beech and Hornbeam, and others. The Walnut is generally cultivated as also the Carob. All the ordinary fruit trees, as apples, peaches, pears, plums, apricots, medlars, &c., flourish.

At an altitude of about 6,000 feet the famous Cedar of Lebanon flourishes, and doubtless once covered the subalpine zone of Lebanon and Anti-Lebanon. It is now found in only a few groves of Lebanon, and is extinct in Anti-Lebanon, but grows in considerable quantity in Amanus.

Of wild fruit trees there are few in our district. The sour plum (*Prunus ursinus*) is a plant of the middle and subalpine regions of Lebanon and Anti-Lebanon. A minute dwarf cherry flourishes on the alpine peaks. There is the Arbutus Unedo, L., the Jujube tree, the Hawthorn, the Syrian Pear. Of shrubs almost the only one with an edible fruit is the wild Blackberry.

The characteristic flora of the *almost treeless plains of the interior* consists of numerous species of Astragalus, Centaurea, Phlomis, and Salvia. These plains are the great wheat producing regions of the Levant, and along them armies have always been sure of supplies. Maize, durrah, sesame, barley, and in wet places rice, flourish in this district. From some prominent shoulder of the mountains one of these great fertile plains appears in the spring-time a broad sea of green, and later, in the harvest-season, a sea of gold, stretching away as far as the eye can reach, or to the base of the range of mountains which constitutes its boundary.

The flora of the *Jordan Valley*, besides sharing the characteristics of the lower levels of Palestine, has an element of tropical vegetation, similar to the upper Egyptian and Nubian. The Zaqqûm, or so called Balm of

Gilead Tree, grows nowhere in our district but in this valley. The same is true of the Papyrus, *Salvadora Persica*, *Calotropis procera* (the Apples of Sodom), *Solanum coagulans*, and other plants. The torrid heat of this valley causes its crops to mature very early, and its abundant water is capable, by irrigation, of making it, what it once was, a garden of the Lord.

The *alpine peaks of Lebanon*, *Anti-Lebanon*, *Cassius*, *and Amanus* support a copious and peculiar vegetation, of most interesting botanical character. This vegetation, although useless to man directly, is of great indirect value, as it furnishes the food of large flocks of goats, which are a source of livelihood to no inconsiderable number of goatherds and their employers. These goats, however, do more harm than good to the country, by devouring all seedling trees, and so preventing the second growth o the forests, so needed on the higher mountain ranges, both as a direct source of wealth, and as a regulator of the rainfall.

The *desert flora* is as peculiar and interesting as that of the alpine regions, and like it, although directly of little value to man, indirectly contributes to his maintenance by supporting considerable herds of camels, and in some places asses. Not all of the so-called desert is unproductive. The valleys of Sinai have, until recently, contained large numbers of acacia and tamarix trees, which have furnished much charcoal for the Egyptian market. The supply is even yet not exhausted. The great table land known as the Syrian Desert, furnishes pasturage for innumerable flocks and herds, and supports a large nomad population.

It is evident from the foregoing sketch of the botanical regions of this land that the diversified productions of the different parts of so small a territory have had their full share in its strange history. Thus the fertility of the coast and the great plains of the interior, as well as of the depressions which connect them with the coast, has had as much to do with making them highways for conquering armies as their ready accessibility. An Egyptian or Assyrian Army could march from its base to its objective point almost without commissariat, and find abundant supplies by the way. On the other hand, the rugged surface and stony soil of the mountains, ill-adapted to the production of the cereals, could not furnish an invader with necessary supplies, thus adding to the cost and difficulty of a campaign the necessity of providing a commissariat. Yet in their remote fastnesses or fortified towns the natives could preserve a sufficient store of food to enable them to withstand a siege, and when it was over their forests and upland pasturages furnished a means of quickly regaining a livelihood, while their less fortunate brethren of the plain had been despoiled of all they possessed, and perhaps led away into captivity.

Furthermore, the deserts, while inaccessible to foreign armies, furnished sufficient sustenance to the indigenous shepherds and warriors who roamed over them.

Thus, while parts of the country were being depopulated in every campaign, there remained hives of population, furnished with scanty but

sufficient nourishment for their hardy frames and frugal habits, ready to swarm out over the desolated plains and re-people the fertile districts so inviting to those who had known only the hardships and privations of mountain and desert life.

The *Fauna* of Syria and Palestine in Bible times was more varied, and included more of the larger animals than are now to be found. It is probable that the hippopotamus, the wild ass, and the lion were found in Palestine in historic times. It is asserted that the crocodile still exists in the marshes of the Zarqa and the Kishon. But from early times the wild animals of the more formidable kind were extirpated or driven back into the deserts or remoter mountain districts. Of the larger mammals the bear still exists in small numbers on the high peaks of Lebanon and Anti-Lebanon ; the leopard is occasionally met with throughout the wilder forest and mountain regions ; the oryx, which inhabits the deserts adjacent to Palestine ; the fallow deer, of which a few stragglers inhabit Carmel and the wadies of Galilee ; the ibex, which is found in the deserts and eastern and southern mountains, as far as Sinai ; the Bubale, or Boqr-el-Wahhsh of the Arabs ; the addax, and the kebsh—but few of them are ever seen, and fewer captured or killed by man. The chase, therefore, is of no great importance in this land for the maintenance of human life. Wild swine exist in numbers in the forests of Cassius and Amanus, in the more secluded regions of Lebanon and Anti-Lebanon, and in the cane brakes of the Jordan Valley and elsewhere. They owe their continued existence to the fact that they are regarded as unclean, and unsuitable for food.

The chase is now almost confined to gazelles, hares, porcupines, conies, and other small mammalia, and to noxious animals, as the fox, wolf, hyæna, and jackal, and to birds. This was not, however, always so. In ancient times hunting supported a considerable population, and the game was worthy of noble and even kingly hands.

But if man finds little in the way of game to sustain life in this land, on the other hand, he has little to fear from wild beasts. A few people die annually from serpent bites, a few are torn by leopards or wolves, but predaceous animals have not seriously molested man within the historic periods.

The *domestic fauna* is, however, of great importance to man. It includes such invaluable servants as the camel, the horse, the ass, the mule, the buffalo, the ox, the sheep, and the goat. The camel is to the Arab what the reindeer is to the Laplanders. It is the beast of burden, its milk furnishes a considerable part of the food of the Bedawîn, its hair is woven into cloth for garments and tents, its flesh is also most valuable in case of need. Its value is greatly enhanced by the fact that it is the most inexpensive of animals to feed. In fact, it lives and thrives where no other beast of any use to man could exist. Hence its importance to the dwellers in deserts cannot be over-estimated. Probably without the camel these deserts would have been uninhabited. With it they maintain a very considerable populatiou. The ass, also, is an animal of

exceeding value to man in these lands. It can live on the most meagre and uninviting diet of thistles and stubble, and yet do a surprising amount of work. Being very sure-footed, it is specially adapted to mountainous and stony regions, which are the rule in Syria and Palestine. The goat also is an animal capable of living where other grazing animals would find little or nothing to support life It climbs over almost inaccessible rocks, and lives on a host of aromatic and bitter plants, which no other animal will eat. The importance of these animals in furnishing to man the means of existence cannot be forgotten in estimating the persistence of a large population in the remoter and more barren districts.

VII.—*Mineralogy.*

The mineral wealth of our district is not large. Iron ore is found in large quantities, and has, from earliest historic periods, been worked. The Damascus steel was famous in the Middle Ages. At present, the production of iron is probably smaller than at any previous period, owing to the disappearance of the forests which furnished the charcoal used in smelting. Copper mines were worked in ancient times by the Egyptians in Sinai. Turquoise was also extracted in considerable quantities from the sandstone rocks of Wadi Maghara. Copper is said to be found in the neighbourhood of Jebâ', in Lebanon. Bitumen is found in the neighbourhood of Hasbeiyah and in the Jordan Valley. Chromium s found near Antioch, but its value was not known to the ancients. In general, it must be admitted that the country is poorer in minerals than in other resources, and that it was indebted for its supplies to other lands. Few mines have been discovered, and, except the workers in iron, few of the people have ever depended on metallurgy for their livelihood.

VIII.—*Health and Disease.*

The health of these lands is in general good. They are to a large extent free from the severe inflammatory affections so fatal in the colder climates. They are also free from the peculiar diseases of the tropics. The great variety of productions, the generally wholesome water, and the comparative certainty and regularity of the crops, cause the prevalence of a high standard of health, and prevent the famines which curse countries of one staple. The temperate habits of the people, their freedom from alcoholism, their moderate use of meat, all favour their resisting power to causes of disease, and enable them to bear injuries and operations well. The adjacent Mediterranean, the high mountains, the table lands of the interior, swept by pure and almost constant winds, the deserts which lie on two sides of the land, all contribute to the maintenance of the purity of the air, and support a vigorous stock of humanity, fitted to replenish and infuse new vigor into the more effeminate races of the lower districts. They are also a sanitarium of the most perfect kind, and constantly afford

a refuge to those enervated by the tropical climate of Egypt and the warmer portions of Syria and Palestine themselves. Again and again has it happened, while cholera has prevailed on the coast and in the cities of the interior, that the mountains of Lebanon and Anti-Lebanon, and the Syrian and Sinaitic deserts have been quite free from the scourge.

The bearing of the excellence of the conditions of health on the recovery of a people subjected often to the rigors of war, and the derangement of industry, as well as the forcible breaking up of homes, and the crowding together of large bodies of men, is not hard to see. As a good constitution in an individual enables him to rally from desperate illness and regain sound health, so the sound state of a country's health enables it to recuperate after the horrors of war, and speedily reproduce the population which had been wasted by the sword.

Summary.

Syria and Palestine constitute a territory situated at the meeting point of the three ancient continents, and forming a highway connecting them, and along this highway the historic races of mankind have passed to and from a career of invasion and conquest unexampled in the annals of the world. Yet, although affording an easy pathway to invaders and conquerors, this land contains hiding places for those who have escaped conquest, which have afforded refuge to a large number of communities, still surviving, and transmitting by living tradition the fragmentary history of the past.

The *Climate* is such as to favour rapid increase of population and the maintenance of life, with a small expenditure for fuel and clothing, and a frugal diet. The *Soil* is rich, and produces, under the favourable conditions of exposure, altitude, and rainfall, a vegetation of unexampled richness and variety, and has been proven capable of supporting a very dense population. The *Water Supply* is copious for a country with a rainless summer, and the provisions for storing and distributing it are such that the population is well able to occupy a large part of the land. Even the deserts yield subsistence to a considerable number of hardy men, who are, and always have been, unconquerable. The *Flora* and *Fauna* are such as to favour the growth of population, and to make available to man all that the soil and climate furnish. Finally, it is a country whose lofty mountains and breezy plateaux furnish an admirable sanitarium for its tropical and sub-tropical lowlands.

From the combination of these causes these lands were inhabited from the earliest periods of history, and their populations, so often conquered, destroyed, or carried into captivity, have often returned, or a remnant of them has survived in some mountain fastness or desert solitude, or such rugged refuges as the lava sea of the Leja, or the volcanic cones of the Jebel-ed-Durûz, and these remnants have often clung to the traditions, religion, and customs of their forefathers, and in one case a

few villages have clung to their ancient language, or rather transformed it into a new and most interesting dialect. In taking up the individual sects it will be our duty to point out the origin and history of each, and their present geographical distribution so far as possible.

Meantime, the subject of a second preliminary essay will be—

The Land Tenure, Agriculture, Industries, Dress and Habits, Art and Architecture, Amusements, Science, and Music of these sects, so far as they are common to all.

METEOROLOGICAL OBSERVATIONS.

Sarona, 1887.

The numbers in column 1 of the table show the highest reading of the barometer in each month ; the maximum for the year was 30·285 ins. in January, this being higher than any reading in the preceding seven years. In the years 1880, 1881, and 1884, the maximum was in January as in this year, in 1882 in February, and in 1883, 1885, and 1886 in December. The maximum, therefore, has always been in the winter months. The mean of the preceding seven years highest pressures was 30·207 ins.

In column 2, the lowest reading in each month is shown ; the minimum for the year was 29·145 ins. in April, this being lower than any reading in the preceding seven years. In the year 1883 the minimum was in January, in 1881 in February, in 1880, 1884, 1885, and 1886 in April, as in this year, and in 1882 in July ; the mean of the seven preceding lowest pressures was 29·516 ins. The minimum, therefore, has taken place in the months from January to July.

The range of barometric readings in the year was 1·140 inch ; this range being greater than any in the seven preceding years, viz., 1880, 1881, 1882, 1883, 1884, 1885, and 1886, when the ranges were 0·780 inch ; 0·711 inch ; 0·704 inch ; 0·579 inch ; 0·757 inch ; 0·680 inch and 0·621 inch respectively. The mean for these seven years was 0·690 inch.

The numbers in the 3rd column show the range of readings in each month ; the smallest was 0·104 inch in October, this being the smallest range in any month in the eight years ; in the year 1883 the smallest was in June ; in 1882 and 1886 in August, and in 1880, 1881, 1884, and 1885 in October, as in this year. The mean of the seven preceding smallest monthly ranges was 0·175 inch.

The largest monthly range was 0·843 inch in April, this being the largest range in any month in the eight years ; in the years 1883 and 1884 the largest was in January, in 1882 in February, in 1881 and 1886 in March, in 1880 in April as in this year, and in 1885 in September. The mean of the seven preceding largest monthly ranges was 0·584 inch.

The numbers in the 4th column show the mean monthly pressure of the atmosphere ; the greatest, 29·958 ins., was in February. In the years

1880, 1881, 1882, and 1884 the greatest was in January, in 1883 in February as in this year, and in 1885 and 1886 in December. The highest mean monthly reading in the eight years was 30·060 ins. in January, 1882.

The smallest mean monthly reading was 29·653 ins. in August, this being the lowest mean reading in any month in the eight years; that in August, 1885, was nearly as small, being 29·657 ins. In the years 1880, 1882, 1883, and 1886, the smallest was in July, and in 1881, 1884, and 1885 in August as in this year.

The highest temperature of the air in each month is shown in column 5; the highest in the year was 100°, in October; the next in order was 98° in May, and 97° in April. The first day in the year the temperature reached 90° was on April 10th, and on three other days in this month the temperature reached or exceeded 90°. In May there were two days when the temperature reached or exceeded 90°, in August on nine days in September on two days, and in October on eight days; the highest in the year, viz., 100°, took place on the 29th of October; therefore the temperature reached or exceeded 90° on twenty-five days during this year. For the preceding seven years, viz., 1880, 1881, 1882, 1883, 1884, 1885 and 1886, the temperature reached or exceeded 90° on 36, 27, 8, 16, 14, 24 and 16 days respectively. In the seven preceding years, the highest temperatures were 103°, 106°, 93°, 106°, 100°, 103° and 112° respectively.

The numbers in column 6 show the lowest temperature of the air in each month. The lowest in the year was 32°·5 on January 28th; the next in order was 33° on the 27th of January, and 36° on both the 26th and 29th of the same month, the temperature being below 40° again on the last day of January; in February the temperature was below 40° on seven different nights, and in March on three nights. Therefore the temperature was below 40° on fifteen nights in this year. In the preceding seven years, viz., 1880, 1881, 1882, 1883, 1884, 1885, and 1886, the temperature was below 40° on 13, 2, 13, 2, 9, 3, and 3 nights respectively. In the preceding seven years the lowest temperatures were 32°, 39°, 34°, 35°, 32°, and 38° respectively.

The yearly range of temperature was 67°·5; in the seven preceding years, viz., 1880, 1881, 1882, 1883, 1884, 1885, and 1886, the yearly ranges were 71°, 67°, 59°, 71°, 68°, 65°, and 75° respectively. The mean of the seven preceding yearly ranges was 68°·0.

The range of temperature in each month is shown in column 7, and these numbers vary from 27° in July to 54° in April. In the year 1880 these numbers varied from 25° in August to 53° in both April and May; in 1881 from 29° in July and September to 51° in May; in 1882 from 25° in August to 47° in November; in 1883 from 25° in July to 62° in March; in 1884 from 24° in February to 51° in April; in 1885 from 22° in July to 52° in March; and in 1886 from 26° in August to 55° in June.

The mean of all the highest by day, of the lowest by night, and of the average daily ranges of temperature are shown in columns 8, 9, and 10 respectively. Of the high day temperature, the lowest 63°·4, was in

January. In the years 1884, 1885, and 1886 the lowest was in January, as in this year; in 1881, 1882, and 1883, in February, and in 1880 in December. The highest, 88°·5, was in August, in the year 1880 the highest was in May; in 1881, 1883, 1884, 1885, and 1886, in August, as in this year; and in 1882 in September. Of the low night temperature, the coldest 44°·0, was in February; in the years 1880, 1882, and 1884, the coldest was in January, in 1883 and 1885 in February, as this year, and in 1881 and 1886 in December. The warmest, 69°·1, was in August; in the year 1885 the warmest was in July; in the years 1880, 1881, 1882, 1883, 1884 and 1886 the warmest was in August as in this year. The average daily range of temperature is shown in column 10; the smallest, 18°·5, is in January; in the years 1880, 1883, 1885, and 1886 the smallest was in January, as in this year; in 1881, 1882, and 1884 in February. The greatest range of temperature, 25°·1, is in April; in the year 1884 the greatest was in April, as in this year; in the years 1880 and 1885 the greatest was in May, in 1881 in June, in 1883 in September, and in 1882 and 1886 in October.

In column 11, the mean temperature of the air is shown as found from observations of the maximum and minimum thermometers only. The month of the lowest temperature, 54°·1, was January, but February was nearly as cold, being 54°·2. In the years 1880, 1884, 1885, and 1886, the lowest was in January, as in this year; in 1881 and 1882 in February; and in 1883 in December. That of the highest, 78°·8, was August, as in each of the 7 preceding years. The mean temperature for the year was 66°·5, and of the 7 preceding years, viz., 1880, 1881, 1882, 1883, 1884, 1885, and 1886 were 66°·4, 66°·7, 65°·5, 65°·7, 65°·7, 65°·9, and 66°·8 respectively.

The numbers in columns 12 and 13 are the monthly means of a dry and wet bulb thermometer taken daily at 9 a.m. In column 14 the monthly temperature of the dew point, or that temperature at which dew would have been deposited, is shown; the elastic force of vapour is shown in column 15. In column 16 the water present in a cubic foot of air is shown; in March it was as small as $3\frac{1}{5}$ grains, and in September it was as large as $7\frac{3}{4}$ grains. In column 17 the additional weight required for saturation is shown. The numbers in column 18 show the degree of humidity, saturation being considered 100; the smallest number indicating the driest month, is 50 in March, and the largest 75, indicating the wettest month, was in December; the weight of a cubic foot of air under its pressure, temperature, and humidity at 9 a.m., is shown in column 19.

The most prevalent winds in January were S.E. and S., and the least prevalent were N.E., W., and N.W.; in February the most prevalent were S.W. and S., and the least was N.E.; in March the most prevalent was W., and the least were N., N.E., and N.W.; in April the most prevalant was W, and the least were N. and S E.: in May the most prevalent was W., and the least were N.E., E., and S.E.; in June the the most prevalent were S.W. and W., and the least were N., N.E., E., and S.E.; in July the most prevalent was S.W., and the least were N., N.E.,

E., S.E., S., and N.W.; in August the most prevalent was S.W., and the least were N., N.E., E., and S.E.; in September the most prevalent was S.W., and the least were N.E., E., S.E., and S.; in October the most prevalent was S.W., and the least was N.; in November the most prevalent were S.E., S., and N.E., and the least were N. and N.W.; and in December the most prevalent were S. and S.W., and the least prevalent were N. and N.W. The most prevalent wind for the year was S.W., which occurred on 97 different days in the year, and the least prevalent wind was E., which occurred on only 13 times during the year.

The numbers in column 29 show the mean amount of cloud at 9 a.m.; the month with the smallest is August, and the largest in both January and April, which were of the same value. Of the cumulus, or fine weather cloud, there were 60 instances in the year; of these 18 were in August, 11 in September, and 9 in July. Of the nimbus, or rain cloud, there were 57 instances; of these 14 were in December, 13 in January, and 8 in both February and March, and only 4 from May to October. Of the cirrus there were 46 instances. Of the cirro-cumulus there were 59 instances. Of the stratus 23 instances. Of the cirro-stratus, 10 instances. Of the cumulus-stratus, 6 instances; and 104 instances of cloudless skies, of which 17 were in October, 14 in May, and 13 in September.

The largest fall of rain for the month in the year was 5·74 ins. in January, of which 1·83 inch fell on the 16th. The next largest fall for the month was in December, 5·22 ins., of which 2·12 ins. fell on the 15th. No rain fell from the 2nd May till the 14th of November, with the exception of one day, viz., the 12th of September, when 0·08 inch fell, and so making two periods of 132 and 63 consecutive days without rain. In 1880 there were 168 consecutive days without rain; in 1881, 189 consecutive days; in 1882, there were two periods of 76 and 70 consecutive days without rain; in 1883, 167 consecutive days; in 1884, 118 consecutive days; in 1885, 115 consecutive days; and in 1886, 171 consecutive days without rain. The fall of rain for the year was 17·06 ins., being smaller in amount than in any of the preceding seven years by 11·62 ins., 0·43 inch, 5·03 ins., 13·00 ins., 1·67 inch, 3·00 ins., and 3·03 ins. respectively. The number of days on which rain fell was 43. In the seven preceding years, viz., 1880, 1881, 1882, 1883, 1884, 1885, and 1886 rain fell on 66, 48, 62, 71, 65, 63, and 66 days respectively.

James Glaisher.

A HITTITE PRINCE'S LETTER.

The majority of the Tell el Amarna letters have now been published. Whether the kings to whom they are addressed are to be identified with Amenophis III and Amenophis IV, or with invading Babylonian monarchs who had reached Egypt and there ruled for a brief space, and to whom the Princes of Mesopotamia, and the Babylonian Governors set up in Syria and Phœnicia, were writing, may be doubtful. It is

highly improbable that native Egyptians, acquainted with the simpler hieratic script, would have used the clumsy Cuneiform ; and it is indisputable that the letters were written, not in Egypt or by Egyptians, but in Syria and Mesopotamia, and by Asiatics. The names of the monarchs addressed are read as *Nimutriya* and *Khuri*. The first has been supposed equivalent to Ra-mat-neb (Amenophis III), and the tablet with his name bears the Egyptian character *nuter* on the back. The second is supposed to be the Oros of Manetho, and connected with Nofer-Kheperu-Ra (Amenophis IV). The name of one of the messengers sent with a letter to *Nap-khu-ririya*, King of Egypt, is Pirizzi, and this is also that of a messenger from the King of Mesopotamia mentioned in the Egyptian docket on the back of another letter from the same writer. This letter mentions the Egyptian Queen Thi, and it appears that the author (Dusratta, King of Mitani) was father-in-law to the King of Egypt. Naturally he uses the cuneiform script, but the docket is in hieratic writing. Nap-khu-ririya seems pretty clearly to be Amenophis IV, which gives the date of the letter. (*See* "Proceedings" Bib. Arch. Soc., June, 1889.)

Among this mass of Semitic documents there is one letter in another language, addressed to Nimutriya, and this has been partly translated by Dr. Hugo Winckler and by Dr. Sayce.[1] They both have come to the conclusion that the language is that of the Hittites ; but the difficulty which remains is that, as the text for the most part is ideographically written, it is only possible to obtain the sounds of the language in a few cases with any certainty.

The reasons for supposing the letter to be Hittite are : 1st. That the name of the sender is Tarkundarais—a Hittite name. 2nd. That he ruled apparently in Syria. 3rd. That the Prince of the Hittites is mentioned in the letter.

The heading of the letter is supposed to be Assyrian, it is as follows :—

"To Nimutriya the Great King the King of Egypt of Tarkundarais King of the Land of Arzapi the letter."

The more certain phrases of the letter itself are as follows :—

". . . me peace to my houses my wives my sons my great men my army my horses my lands . . . may there be peace.

". . . may there be peace to thy houses thy wives thy sons thy great men thy army thy horses thy lands may there by peace . . . .

"The Prince of the Hittites ruling at the Mountain of Igaid . . . of gold by weight, twenty *manas* of gold, three *Kak* of ivory, 3 *Kak* of . . , 3 *Kak* of . . , 8 *Kak* of . . . , 100 *Kak* of *lead* (or tin) 4 . . . , 100 *Kak* of . . , 100 *Kak* of . . , 4 Kukupu stones . . . , 5 Kukupu stones of a good kind, 3 . . , 24 plants of the

[1] Dr. Winckler's paper was read at the Royal Academy of Berlin, on December 13th, 1888. The text is published by Dr. Sayce ("Proc." Bib. Arch. Soc., June, 1889.)

. . . tree, 10 thrones of ushu wood from the White Mountain 10 . . . , 2 ushu trees. . . . ."

The more obscure part of the letter to be mentioned afterwards is supposed to refer to a demand for the hand of an Egyptian princess.

The importance of this letter for the study of the Hittite language is very great, and it is satisfactory to find that in the opinion of specialists it presents many marks of relationship to the Akkadian. In the absence of bilinguals it is one of the best means of furthering our knowledge which has come to hand. The following remarks occured to me on first reading it.

Tarkhundarais.—The last syllable is doubtful, but the name presents us with the familiar Tarkhun, which I have already shown to be a Turko-Mongol word meaning "chief" Dara is an Akkadian word for "prince," and, as I have previously shown, is also Hittite, and found in Altaic languages with the same meaning.

Igaid may probably, as Dr. Sayce suggests, be the Ikatai of the "Travels of a Mohar," which, as is clear from Chabas' commentary, was in the neighbourhood of Aleppo. Thus the Prince of the Hittites appears in the Hittite country, where alone we know of this tribe—in northern Syria.

Mi is the possessive pronoun, first person singular, as in Akkadian, and in Altaic languages generally. (*See* my previous paper on the "Hittite Language" in the *Quarterly Statement.*)

Ti is the possessive pronoun, second person singular. This no doubt recalls Aryan languages, but is also found in Altaic speech, as in the Hungarian *te* and Zirianian *te.* It is a dialectic variation of *si*, which is the commonér sound in Altaic speech (Mongol *si*, Akkadian *Zae*).

Plural.—The sound is not supposed to be certain, but the emblem is that which has the sound *mes* in Cuneiform. The tacking on of this emblem to those for "house," "wife," &c., &c., seems to indicate an agglutinative language.

Khuuman-kuru-in, "may there be peace," is a precative form, which Dr. Sayce admits, to remind us of Akkadian.

An-na, rendered "lead" by Dr. Sayce, seems, perhaps, to be phonetic. In this case it recalls the Akkadian *anna*, Hungarian *on*, Armenian *anag*, for "tin."

Arzapi, the country ruled by Tarkhundarais, is thought to be Razaffa of the Assyrian inscriptions, the Rezeph of the Bible (2 Kings xix, 12). If so, this prince with a distinctively Hittite name ruled the mountains of Ikatai, from a town supposed to be near Nisibin. It is not a well fixed site. One place so-called was on the road from Rakkah to Homs, west of the Euphrates; another was near Baghdad. The Syrian Reseph may fairly be supposed to be the place intended; the emblem *Ki* attached to the word is probably the genitive.

It appears, therefore, that as far as at present deciphered, the letter in question confirms my view that the Hittite language was one closely connected with Akkadian.

The following appears to me to be the correct translation of the main part of the letter of which only a few words have been previously read :—

"My great Chief, the Lord Irsappa, the Envoy, who is of my family, my brother, I am sending to fetch thy daughter, O my Rising Sun, as a wife. My brother has a son of noble appearance. He brings, therefore, to thy city a bag of gold as a present. Let my brother bring my gift to thee from this place. These my . . . thus he brings, afterwards to give thee, in order that thy servant the envoy from thee with this one of mine whom I am sending may take her afterwards to the young man. Thy (servant ?) I cause to fetch, to fetch from far (if) thy daughter receives the envoy with favour, thy envoy shall go as far as the house of the great fortress, before the young Princess, as she goes through the countries . . . Let her come to (our ?) palace. The Prince of the Hittites, ruling in the mountains of Ikatai, sends therefore 30 *tu* of usu wood, as appointed. Irsappa will weigh the weight of the bag of gold."

The expression "Rising Sun" as a title for the King of Egypt, occurs in many of the Tell el Amarna texts as well as in Egyptian.

The inscription so rendered gives us at least seventy Hittite words some of which, however, being written "ideographically," that is, by a single emblem, may be considered of doubtful sound ; but the rest, amounting to more than fifty, are syllabically written, and may thus be considered of known sound.

Out of this total there are twenty-five words which I had previously fixed as belonging to the Hittite language, being found either on the Hittite monuments, or by analysis of the names of Hittite towns and of Hittite Princes. The number of such words, which I have previously published, amounts to about 100, so that a quarter of these words are confirmed by this new and independent evidence.

The words so confirmed are as follows :—

A = participial affix.
Ar (or *Er*) = man.
Ata = "Chief."
Du = "go."
E = "house."
Enu = "Lord."
Ga = "Oh."
Gal = "great."
Gan = "this."
Kar = "fortress."
Kal or *Khal* = "town."
Khat = "Hittite."
Kur = "mountain."
Me = "to be."
Mes = plural.
Mu = "me," "my."
Ne = "he," "of," "to."
Neke = "belonging to."
Papa = "young man" and "father."
Sa = "with," "in."
Sar = "Chief."
Si = "eye," "see."
Tak = "stone."
Tarku = "Chieftain."
Ti, Ta = "to," "at."

The words not previously connected with the Hittite language require further notice for their identification :—

1. *Agga*, "strong"; Akkadian *Agga*, "strong"; *Akku*, "great"; Medic *Ukku*, "great."
2. *An-na*, "tin"; Akkadian *an-na*, Hungarian *on*.
3. *Bi*, "he," "it"; Akkadian *Bi*, "he"; Medic *Ap*, *up*; Turkish بو, "this"; Samoyed *ba*; Finnic verbal pronoun *pi*; Esthonian *b*; Tcherkess *be*; Yakut *by*.
4. *Bi-bi-pi*, "the which" (pl.); Akkadian *aba*, Medic *upe*, "which," with the plural in *pi* as in Medic.
5. *Dam*, "wife," as in Akkadian (ideographic).
6. *Egir*, "afterwards" Akkadian *egir*, (ideographic).
7. *Guskin*, "gold"; Akkadian *Guskin* (ideographic). This word is probably connected with the Tartar *kin*, "gold"; Manchu *chin*; Chinese *kum*.
8. *Gar* (in *Khalugari* "haste-maker"); Akkadian *gar*, "to make" or "cause," perhaps connected with the Aryan root KAR or GAR, "to do."
9. *Ki*, "as." I have already proposed this as possibly a Hittite word. Akkadian *ki*, "as"; Hungarian *ki*, "so."
10. *Ku* (or *Kuin*) "dawn" or "bright"; Akkadian *ku*, "dawn" or "bright"; *kun*, "dawn." Compare Livonian *koi*, "the dawn," Finnic, *koi*, "bright," Basque *eguna*, "day."
11. *Kuru*, "peace," as in Akkadian (ideographic).
12. *Kala*, "city." *See* "Transactions Bib. Arch. Soc.," ii, p. 248, where W. A. I. ii, 30, 14, is quoted as the authority for the word 𒆠 𒆳𒆳, *Kal, or Kalla*, being an Akkadian word for "town.' According to the known rules of change in sounds this would be the older form of the later *val*, *vol*, or *aul*, a well-known Tartar word for "city,"or "camp," found also in Etruscan. In Susian the form *khal*, "city," is well-known. It may be but a variant of *kar*, "fortress," the Votiac and Zirianian *kar*, "town."
13. *Kuis-tu*, "as far as," or "up to"; Medic *kus*, "until."
14. *Kuukta*, "favourable"; Medic *kukta*, "favouring." For these and other Medic words the authority is Oppert's "Les Mèdes."
15. *Ku-ku-pu*. Probably the plural of *ku-ku*, which is the intensitive of *ku*, "bright, "precious"; the word is preceded by *tak*, "stone" (Turkish *tash*), and *tak-kukupu* would thus mean "precious stones," which are enumerated among the presents.
16. *Kur-ra*, "horse," as in Akkadian. There is no very evident reason for regarding this as ideographic.
17. *Khal*, "haste" (in *Khalugari*, "haste-maker") as in Akkadian, *e.g.*, *Dara khal-khal*, "the very swift (or 'bounding') deer." It is the Votiac *zal*, "swift"; Altaic *yel*, "swift."
18. *Là*, "gift." This appears to be an Akkadian word, and to occur in in Medic as *Lu*.
19. *Lal*, "weight," as in Akkadian (ideographic).
20. *Li-il* appears to be the Akkadian suffix *lal*, "possessing"; *si-lil*,

"appearance possessing," being thus the Akkadian *si-lal*, "aspect."

21. *Muk* or *Vag*, supposing the sign to be read as in Medic, means "to bring," "carry," "carry oneself," "travel."
22. *Nin*, "Lady," as in Akkadian. In Chinese we find *neung*, "Lady"; in Turkish *nene*, "mother," a term of respect.
23. *Nitakh*, "man," as in Akkadian (ideographic).
24. *Num*, "high," "noble," a common Turanian root; Samoyed *num*, "high," "heaven." In Akkadian, *Num*, *Nin*, *Enim*, is "high"; *Nu*, "Prince," is probably from the same root.
25. *Pi*, "to cause"; Medic *Pe*, "to do."
26. *Pir*, "army," as in Akkadian; compare the Medic *Pirra*, "battle."
27. *Pu*, "young." In Etruscan we find *Pu* and *Puia* for "daughter" or "child"; Hungarian *fiu*, "son"; Vogul *pu*; Votiak *pi*, connected with *pu*, "little." This word is also Aryan for a child, whence *pu-er* and *pu-ella* in Latin. The gender is not distinct in Akkadian.
28. *Ra*, "towards," as in Akkadian. In Buriat Mongol *r*, "to"; Medic *ra re*, "to"; old Turkish datives *ra ru*; Basque *ra*, "towards." This particle I had already supposed to occur on the Hittite monuments.
29. *Sak*, "son"; Medic and Susian *Sak*; Etruscan *Sech*. It survives in the Lapp *sakko*, "offspring." It is also known in Cassite.
30. *Sa-as-sa*, "ruling," apparently the causative from *Sa* and *Assa*; Akkadian *Sa*, "ruling" *Issi*, "master." This is very common, *e.g.*, Etruscan *Isa*; Yakut *us* and *icci*; Altaic *us*, Finnic and Esthonian *issa* or *isä*, meaning "master." *Khate-sa-assa* means, I think, clearly "Ruler of the Hittites."
31. *Sade*, "mountain," as in Akkadian (possibly ideographic). *Sad* appears to mean a mountain chain (from a root meaning "long"). The word was adopted in Semitic languages.
32. *Sari*. In the Medic texts of Malamir we find *sar* in the sense of "appoint."
33. *Sis*, "brother," as in Akkadian (ideographic).
34. *Su-kha*, "bag." In Akkadian *sugga* is rendered "baggage. Compare the Hungarian *zsok*, "bag."
35. *Si* "face," "appearance," *cf. li-il*.
36. *Tik ?* "in front of," as in Akkadian.
37. *Tsil*, *Tsilya*, apparently the Akkadian *Tsil*, "to raise," "put."
38. *Tur*, "child"; Akkadian (ideographic). Compare Yakut *ödĕr* Tunguse *edör*, "young"; Etruscan *etera*, "child"; Mordwin *Tsur*, "son."
39. *Tur-rak*, "daughter," as in Akkadian *Rak*, meaning "female."
40. *U*, "relation" or "blood," as in Akkadian (ideographic).
41. *U*, "I"; Akkadiau *U*, *Vu*; Medic *Hu*.
42. *Ud*, "sun," as in Akkadian (ideographic); Buriat Mongol *ude*, "day"; Chinese *yat*, "sun."

43. *Ud*, "to appear," connected with the preceding.
44. *Uppa*, "thus," "therefore"; Medic *uppe* or *huppe*.
45. *Zi*, probably "to carry away," as in Akkadian. The word *an-zi* appears to be a verb. The preceding syllable forms the infinitive (*cf.* Medic *an-to*, "to go"; *in-paru*, "to arrive"; Akkadian *ni-gin*, "to enclose.") In each case the root is affixed.
46. *Zi-in*, apparently "palace"; Akkadian *zi*, "building"; Medic *zi-yan*, "palace."

In addition to these words we have the personal name *Ir-sappa* for the Hittite messenger. Each of its constituents occurs in other Hittite names: *Ir* (in *Irkhulin*, the name of a King of Hamath) is apparently the common Turkic *er*, "man"; *Sappa* compares with *Sap-lel*, a Hittite Prince mentioned in an Egyptian papyrus.

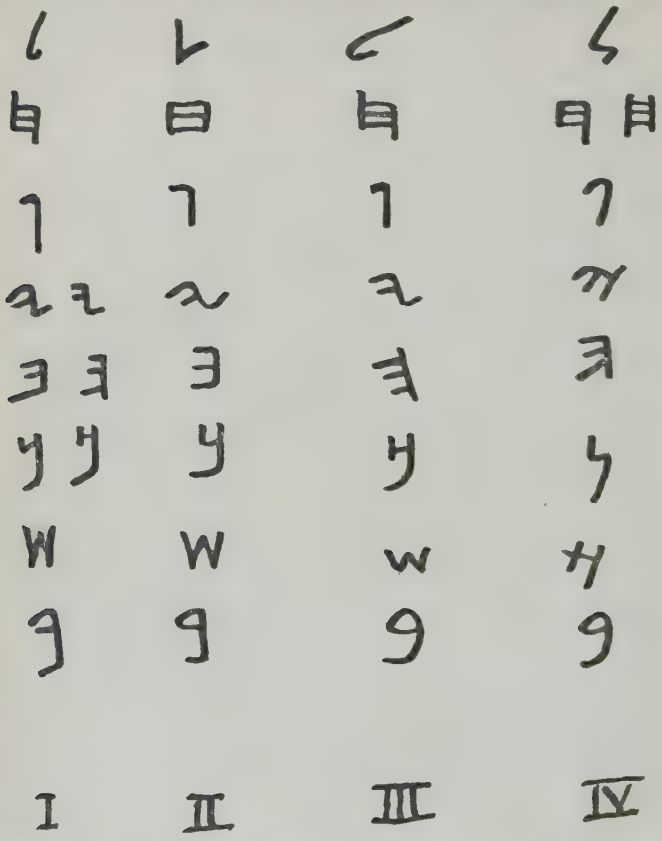
Several doubtful words have not been noticed in this enumeration. They are as follows: *am* and *ma*, "this one" (as in Akkadian); *makh* "great"; *kak-ti*, "says"; *da*, "my" (as in Medic); *du-ukka*, "again"; *dusi*, "he is" (Medic *duis*); *kue*, "putting" (as in Akkadian); *daas*, "they are" (as in Medic); *ki*, "place"; *khuudak*, "he may take"; *kidda*, "far" (Akkadian *gid*); *asmiis*, ""she has received"; *ga-as*, "she comes"; *tu*, "weight"; *shi*, "horn." The following words are also of unknown sound, "servant"? and "country." The words *raat*, *khu-uz* (perhaps "slave"), *Kak*, *Istu*, are difficult, but *guza* seems to mean "throne, and *khir*, *gis*, *pa-na*, "plants of the Pan tree," recalls the Hindi name for the betel. *Gismestu* can hardly mean "thy trees" because of its position in the sentence; as repeated (lines 7 and 10) it might mean "to continue." *Khu*, "he," "this" (as in Akkadian and Medic) seems to occur in line 14, and *da* in line 18 "to give" (as in Akkadian). The new letter not only appears to show clearly that the Hittite language was a Tartar dialect akin to Akkadian and Medic, but it also materially increases our stock of Hittite words, giving a present total of about 150 in all. The grammatical construction of the sentence is exactly that which has been discussed in my previous paper on the "Hittite Language" in the *Quarterly Statement* for 1888.

C. R. C.

THE SEAL OF HAGGAI.

THE attached comparison may be of value as showing on what grounds this seal is supposed to be ancient. Col. 1—The Haggai letters. Col. 2—The Jewish Early Coinage (2nd cent. B.C.) Col. 3—The Siloam Text (supposed 700 B.C.) Col. 4—Late Phœnician (2nd cent. B.C.) In the test letters, *Cheth Yod Shin*, the Haggai character is nearer to the Siloam Alphabet.

The assertion that the Siloam text presents older forms than the Moabite stone is as yet unproved; on the contrary the forms of the *mim*, *nun*, and especially of the *aleph* are those found on texts of the 7th



century B.C. and later, and the text is only placed as early as 700 B.C. because some of its letters approach those of the older Moabite alphabet.

C. R. C.

BEZETHA.

This name applied to the new part of Jerusalem, north of the temple. Josephus speaks of Bezetha (Βεζηθά) "which is *also* called the New City" 2 Wars xix, 4) which by no means shows that the Hebrew name meant "New City." Dr. Neubauer (Geog. Tal. p. 139) says the word has been

variously translated. The common etymology is בית חדתא *Beth Haditha* "New house" others give בית זיתא "House of Olives." R. Schwarz points to the word בציצא "swamp" but there are no swamps at Jerusalem. Yet the real meaning of the name may not be unconnected with a passage to which R. Schwarz was referring.

Dr. Neubauer cites this passage which appears in various Talmudic works. Tosiphta *Sanhed*, ch. 3; Tal Jer *Sanhed* i, 2; Tal Bab *Shebuoth* 16a, *Megillah Taanith*, ch. 6. "Two places called Bitzin (בציצין or בציים) existed at Jerusalem, the lower and the upper. The lower was added to Jerusalem by the exiles who came back from Babylon and had the same rights as the rest of the city, the other was added later by a king and without consulting Urim and Thummim. It had not previously been added to the city because it was on the weak side of Jerusalem."

Now since Bezetha was both on the weak side of Jerusalem, and also only added in the later times of the Herodians, it is clear that the Upper Bitz'a may, as Dr. Neubauer said, very probably be Bezetha.

I would now call attention to the meaning of the word. The root בצע in Aramaic is used according to Buxtorff with the meaning "to cut off" or "divide." Hence the Bitz'a was the "cutting" (*Frustra Fovea Fossa*) and Gesenius (s. v. בזא) makes the Hebrew roots בזא and בצע and בזז equivalent, all with the sense of *dividing*. Hence we might easily suppose that *βεζηθα* (with the long vowel *Bezétha* represents a word בזאתא from the Root בזא equivalent to the Aramaic בציץ.

Bezetha only appears in history after the Christian Era, that is after the building of Herod's Temple. Now, as Josephus explains (5 Wars iv, 3), "It lies over against the Tower Antonia, but it is divided from it by a deep valley which was dug on purpose, and that in order to hinder the foundations of the Tower of Antonia from joining to this hill." It is true that in the same passage he seems to consider Bezetha as equivalent to the Greek "New City," but the translation may here be doubted.

It seems probable that Bezetha, therefore, may simply be the Hebrew or Aramaic *Bezétha*, and may mean "the cutting," referring to the fosse north of Antonia, which still exists and which was converted, after the time of Josephus, into the Twin Pools. This explanation has not, as far as I know, been previously proposed.

C. R. C.

ESAU'S HEAD.

THERE is a curious legend in the Talmud as to the death of Esau. According to this account, Hushim, son of Dan, cut off Esau's head in the faction fight which followed the burial of Jacob. The head was buried in Hebron, but the body in Mount Seir.

On the Survey Map north of Hebron will be found the village of Siair

(Sheet XXI, Mem. III, p. 309), in which is shown the traditional tomb of Esau (*El 'Ais*), which I have fully described on a later page (p. 379).

The village appears to be the Zior of the Bible (Josh. xv, 54), but it would appear probable that at some time or other this site was regarded as the Biblical Seir, where Esau's body was buried. The legend of the head was not, however, recovered in connection with Hebron.

C. R. C.

GIHON.

In histories, commentaries, books of travel, and guidebooks, we read of a Mount Gihon, a Valley of Gihon, a Fountain of Gihon, and an Upper and Lower Pool of Gihon. In the Bible, Gihon, near Jerusalem, is mentioned only as a place which had an upper and, as may be inferred, a lower outflow of water (2 Chron. xxxii, 30.) It was at a lower level than the city, in the valley נחל and apparently near enough to En-Rogel for shouting and music to be there heard from it; but the two places were not in sight of each other. From Joshua xv, 7, it appears that En-Rogel was to the east or south-east of the city, and as Gihon was near it, and in a nachal, or narrow deep water-course, we must look for the latter in one of the narrow valleys which converge just below the city on the south-east. In the Chaldee and Syriac versions of the Bible, Gihon is translated Siloah, and this gives an indication of its position. According to high authorities, Gihon means a bursting forth and was therefore the name given to this water source. But this term is applied to no other spring, and it seems to me not improbable that the true derivation of Gihon is not גִּיחַ *giah*, to burst forth, but גָּחַן *gahan*, to bow down to prostrate oneself, and that the term was originally applied, not to the fountain, but to *the canal which brought the water from the fountain*.[1] How fitting such a term would be for such a narrow passage, which can only be traversed in portions of its extent by a person going literally on his belly גָּחוֹן *gahon*, everyone who has been through the canal will feelingly recognise. But however this may be, all the difficulties of the narratives, so far as Gihon is concerned, seem to disappear if we consider that the names Gihon and Siloah were applied to the canal, and especially to its southern end, which was the lower and principal outflow of its waters whilst its upper outflow was at what is now called the Virgin's Fountain. There is nothing to indicate the situation of the Shiloah alluded to by the prophet Isaiah (viii, 6), but there can be little doubt that it was identical with the Siloah, or more properly Shelach, of Nehemiah; only the prophet speaks of the softly flowing stream, and Nehemiah of the pool which it supplied. That this pool was the same as the "pool of Siloam" few will question, and if there ever was a "pool of Gihon" (which there

[1] The form גִּחוֹן or גִּיחוֹ, if derived from גָּחַי, is exactly the same as שִׁלֹחַ or as the Rabbis spell it שִׁילוֹחַ, from שָׁלַח to send (cf. John ix, 7).

was not) it would have been either here or in the other valley, in which was the upper outflow of water. By David Kimchi and Rashi, as well as by the Targum, Gihon and Siloah are regarded as identical, and this being so, it is easy, in the light of modern discovery, to understand the dictum of R Samuel that "Siloah was within the city" שלוח היה באמצע המדינה. (Talm. Jer. Chag., page 4). The entrance to the passage leading down to the shaft by means of which the branch of the aqueduct was reached from above, as discovered by Sir Charles Warren, was almost certainly within the ancient city. This shaft and passage may have been constructed partly for convenience of ordinary life, but were no doubt chiefly designed to enable those within the walls to obtain the water when the outer approaches to it were stopped and hidden.[1] This branch aqueduct is a part of the canal which I venture to think was called Gihon or Siloah, and thus Siloah might be truly said to be within the city.

THOMAS CHAPLIN, M.D.

SITE OF CALVARY.

Now that so much interest is concentrated on the excavations in progress in and near Jerusalem, in which the readers of the *Quarterly Statement* are being well posted up by Herr Schick, would you be so good as to insert the enclosed letter, which I happened to come upon when turning over a copy of "Mount Seir," and which in justice to the late Colonel Churchill ought to be made public?

Allow me to add that, in my opinion, the recent excavations in the neighbourhood of "Jeremiah's Grotto," so clearly described by Herr Schick, all tend to confirm the view that this spot is without doubt the site of the Crucifixion and of the Holy Sepulchre.

EDWARD HULL.

"Ordsall Rectory, Retford, Notts.

"SIR,—May I take the liberty of saying that nearly 20 years ago the site of Calvary as you and Captain Conder indicate it, was pointed out to me by Colonel Churchill (now dead), the historian of the Lebanon?

"His arguments were identical with yours, though we neither of us knew of the Roman Causeway. On two subsequent visits to Jerusalem the idea became a certainty to me.

"I do not think Colonel Churchill mentioned his idea to many persons, as it met with much disfavour.

"I am, Sir,

"Faithfully yours,

"S. KELSON STOTHERT.

"To Professor Hull."

[1] No doubt Hezekiah stopped the lower outflow as well as the upper, for he stopped "*all* the fountains." The Jews who sustained the siege by Titus were not so prudent.

NEHEMIAH'S WALL.

Mr. St. Clair says that in his line for this wall he has "nowhere departed from probability." To me he rather seems to have plunged into impossibility. To reduce his theory to ruins, all that is needed is to prove that Nehemiah's Wall passed near 'Ain Silwân (Siloam), since thence to the wall of Ophel (Neh. iii, 27) it could never have passed up the Tyropœon.

It may be well to premise that, though he names Lewin and Warren, no support whatever from these two writers or from Thrupp accrues to Mr. St. Clair's theory, since Lewin draws Nehemiah's Wall down to Siloam, and Sir Charles Warren, in his plan ("Jerusalem Recovered" and "Temple or Tomb"), does the very same; while Thrupp, unable to bring his wall down to 'Ain Silwân, brings Siloam up to it instead—all of them having seen, what is obvious enough, that the wall passed *near* Siloam.

If Mr. St. Clair, as I pointed out (1889, 207), appeals to Josephus, his theory collapses at once, for the Jewish historian states that the first wall was built by the kings, and makes it to reach *to Siloam*. I quoted *three* passages to prove this, and it is no answer whatever for Mr. St. Clair to ignore *two* of them entirely, and, as to the third, to suggest that "thence" may refer to a place that has *not* even been named. Josephus distinctly speaks of part of the first wall as "bending from Siloam towards (or facing) east" (Wars, v, vi, 1). Again (as I pointed out) the Romans drove the Jews out of the lower city and "set all on fire *as far as Siloam*." How possibly could the wall bend from Siloam or the fire reach to Siloam if the wall on the north never came nearer to it than 1,500 feet, as is urged by Mr. St. Clair, and so shown on his plan. It seems wasting space to add that when the country for 90 furlongs round had been scoured for wood there would in August be nothing outside the wall left to set fire to "as far as Siloam."

Therefore *within* the city the fire extended to Siloam, or, in other words, the wall came near to 'Ain Silwân. Whatever support Mr. St. Clair may have for his new theory, he will find none whatever in Josephus, and perhaps now he will be willing to dismiss this witness, as the first wall of his time need not *necessarily* have been on the line of that of Nehemiah.

Accordingly, *without Josephus*, it is next to be proved that Nehemiah's Wall came near to Siloam. It is stated (Neh. iii, 15) that Shallun repaired "the wall of the Pool of Siloah by the king's garden." Happily, Mr. St. Clair admits that this pool was near 'Ain Silwân, and does *not* urge that Nehemiah is here said to build a wall near that pool, though distant some 1,500 feet from *his* (Mr. St. Clair's) city, merely to show that he had plenty of workmen to spare. Mr. St. Clair maintains,

however, that his wall across the valley, 1,500 feet distant from the Pool of Siloam, derived its name from that pool; just as now the Jaffa and Damascus Gates at Jerusalem are named from places miles away. Gates naturally have and had, as at Rome, their name from places to which the road led that passed through them; but that part of a city wall should have its name from the place as well as from the direction (as east, &c.) towards which it looked is quite a *different* question. Neither Lewin (so far as I remember) nor Mr. St. Clair attempts to give any instance of the kind.

Neh. iii, 15, mentions indeed the *fountain* gate, because the road through it led to the *fountain*. Whether this means 'Ain Silwân or En-rogel (*see* Jos. Ant. vii, xiv, 4, and Wars, v, xii, 2) need not now be discussed; and if the wall adjacent could have derived its name from the road, why, I may ask in turn, was it not called *the fountain wall*, instead of *the wall of the Pool of Siloah?* If there is any truth in Mr. St. Clair's way of taking the words, surely he can furnish us with an example to save his theory from destruction.

Until such an instance is produced, *the wall of the Pool of Siloah* must be taken to mean *literally what it says;* just as the Damascus wall means the wall of and at Damascus, and not part of the wall of Jerusalem, near the Damascus Gate.

Therefore, as Shallun repaired the wall of the Pool of Siloah, it seems to me that the conclusion is inevitable that the wall went close to the pool (so as to defend it), even if it did not actually enclose it, as seems to me to have been most probably, if not certainly, the case in *Nehemiah's* time.

And now my task on this point is practically done, since if the wall came near to 'Ain Silwân Mr. St. Clair's structure falls to the ground like a castle of cards, and there it must remain until it can be shown that the wall of the Pool of Siloah was not the *actual* wall of that pool.

A few other points, however, deserve notice.

1. I have never objected to a bay up the Tyropœon. I know as yet of no evidence that there was not such a bay (in the wall) in the time of Solomon, and at what point the wall crossed the Tyropœon is still an unsettled question; but I maintain that it can be proved that in the time of Hezekiah the wall on Ophel (so-called) must have reached close to 'Ain Silwân, and have thoroughly defended it, if it did not also enclose there the Pool of Siloah.

2. I fail to understand what Mr. St. Clair means by saying, "Their (*i.e.*, others' and my) wall does not and cannot effect a junction with the wall of Ophel." Why cannot *our* wall from the south join that wall just as well as his wall does from the west? As a matter of fact, Sir Charles Warren's and Major Conder's wall on their plans ("Jerusalem Recovered" and "Handbook to the Bible") actually do join the Ophel wall, and (1879, 179), on "Nehemiah's Wall," I state, "Here we seem to join the *wall of Ophel.*"

3. He says again of our wall, "It cannot be made to satisfy the

descriptions in Nehemiah." What does this mean? If it means we cannot show "corners and turnings," I would observe that no reasonable person would expect to find such underground remains before the required excavations are made.

4. I believe the wall of Josephus had (as Mr. St. Clair says) a bend *above* Siloam; but this in no way prevented the wall afterwards going down to Siloam, and there enclosing the *spring* (Josephus's word) of Siloam, as seems probable from the fact that Simon held that spring.

5. After Mr. St. Clair's procession from the west reaches the Ophel ridge, we do not read of their passing any point named on the repaired wall. Why, then, after my procession reaches the same ridge from the south, is it to be required to pass any point named on the same repaired wall? It seems arbitrary to demand more from us than from himself. Evidently once on the ridge of Ophel the procession kept to it.

6. I am *confident* that the wall came *near to* the Pool of Siloah (though I have never insisted on its *inclosing* it), because *the wall of the pool is distinctly stated to have been repaired.* Mr. St. Clair is wrong when he says (*supra*, 47) I argue "that Josephus must mean this because he speaks of the wall bending thence again." As I am cautious about trusting Josephus, let me say I take him to prove that the wall came *near* to Siloam in *his* own time, but as to Nehemiah's time I do not care to ask on this point what Josephus thought.

7. I see no object in attempting to add details, without further evidence, to the line I adopted on p. 179 in *Quarterly Statement*, 1879. My reason is given in 3, above.

8. Where do I say "the wall of Ophel extended further east than Warren found it?" That it extended further south than he traced it is, I imagine, admitted now by everybody who writes on Jerusalem, except Mr. St. Clair. I quoted two passages from the Bible to prove that before the time of Nehemiah there was a wall on Ophel due west of the Virgin's Fount or Gihon. One of these (2 Chron. xxxiii, 14) Mr. St. Clair passes over in silence, not seeing (I suppose) how to get over it. The other (xxxii, 30), which speaks of Hezekiah's stopping Gihon, &c., he explains in an amusing manner, being unwilling to admit that the Jewish King made the tunnel through Ophel in order to prevent an enemy using the waters from Gihon. While he admits that Schick's aqueduct at that time carried water into the Tyropœon, he supposes that the waters sometimes could not rise high enough to flow into it, and that therefore the tunnel was made through the hill at a lower level for the waters to flow more constantly.

This beats all the odd notions one has heard of about Jerusalem. The difference of level between the bottom of the aqueduct and the water in the tunnel cannot be much more than 12 inches, though really the more the better (*see* "Defence of the Gutter"), and yet merely for this gain of about 12 inches Hezekiah is made to cut through the rock a tunnel 1,700 feet long.

Now, from what I have seen and heard of Gihon for some years,

I hereby certify Mr. St. Clair that it is a well-conducted spring, and, though remittent, still always obedient to natural laws and ready in old time to rise at a moment's notice all the inches necessary to reach the higher aqueduct; and more than this, to remain at that height unless emptied by over-drawing. Indeed, I venture to assert that the tunnel was made by Hezekiah because the waters would persistently *rise*, not because they would *not*, and not only rise, but also *overflow*; so that Hezekiah, do what he might, could not prevent their flowing and overflowing as usual, any more than he could by the plug stop En-rogel from overflowing after heavy rains. Therefore Hezekiah was forced to make the tunnel through Ophel to the Pool of Siloah, where the Assyrians could not get at the water.

It is this same Gihon that leads Kitto to observe, "It curiously shows how deficient men of liberal education and even eminent scholars are generally in knowledge of natural science." I believe, however, that Mr St. Clair knows of the latter more than I do. He made "only a guess," intent at the time on his double wall with its corners and turnings, unless, it may be, his feeble defence was *meant* to portend his speedy abandonment of his strange theory.

Let me add that Schick's aqueduct carried (I believe) water to the King's Pool, below the later Pool of Siloah, in the Tyropœon, and that Hezekiah's tunnel carried water into the ditch (Isaiah xxii, 11) or Pool of Siloah, just below 'Ain Silwân. Further, Mr. St. Clair fails to tell us what Hezekiah (2 Chron. xxxii, 30) was going to gain by stopping the upper outlet of Gihon (at the Virgin's Fount) *in peace*, or even in war, if the Assyrian could draw the water lower down, at the Pool of Siloah.

9. Mr. St. Clair very prudently does not attempt to meet any of the proofs I have brought forward from time to time showing that the City of David, or the Acra of I Maccabees, or the Acra of Josephus, was solely on Ophel (so called), south of the temple. He "accepts," he says, "Warren's Acra;" as if that were enough (1889, 90).

10. Mr. St. Clair's explanation of ἀμφίκυρτος is also curious. He says it means *doubly curved*, and, therefore, counting the inner curve, he asks why it may not mean *crescent-shaped* as well as *gibbous*. Such ingenuity would enable this word to be applicable to the moon at any time except the moment when it is just half-moon. The Greeks, however, had three words to describe forms similar to the phases of the moon when less than full—ἀμφίκυρτος, *gibbous*, μηνοειδής, *crescent-shaped*, διχότομος, *cut in half*. I hardly think the lexicographers will accept this latest interpretation for the first word.

I have corrected enough errors, and will only add that I did not say that the throne of the governor *was* the gate of Ephraim, but that I believed it marked the position of the latter gate. Again, I did *not* say that a builder *invariably* began where the preceding builder ended, but that the expression *after him* (which is not *invariably* used) seemed, *when it is used*, to indicate that the fresh builder began where the preceding one ended.

My apology for these tedious notes must be that unless I can defend my own theory and show the errors of any adverse one relating to the position of David's sepulchres, I cannot reasonably expect the Executive Committee to begin the excavations necessary to finding the sepulchres of the kings.

W. F. Birch.

RUINS OF THE "SLIME PITS" IN THE VALE OF SIDDIM.

The remains to which Mr. H. A. Harper has called attention in the first edition of his "Bible and Modern Discoveries" are undoubtedly the ruins of a *karaize*, such as Mr. William Simpson so well describes in the last *Quarterly Statement*, the underground connecting channel of which is called a *kanot*. But Mr. Harper has fallen into a mistake in supposing that the description I gave him applied to *the present state* of the ruins on the east of the Jordan situated in that singularly dry and waterless region in the *Ghor*, now absolutely desert, extending for some ten or twelve miles north of *Tell Nimrim*. This description, as it appeared on page 12 of the first edition of "The Bible and Modern Discoveries," though it is far from accurate, must have been given by me to Mr. Harper as that of a rough view of the system as it would be if restored, or as it now exists, where it is still to be seen in working order on the plains of Damascus, as described by Dr. Porter in "Murray's Handbook for Travellers in Syria and Palestine." So little like a water system is it, as it now exists in this strip of arid desert in the *Ghor*, held by the *Adwan* tribe of Bedawîn, that Dr. Selah Merrill declares in his account of it that he had no idea of the purpose it served! Nothing like it, so far as I have been able to ascertain, is to be found in any other part of Palestine, for what at first was thought by those who made the survey of Western Palestine to be a similar ruin near *Kurn Surtubeh*, appears, from the account in the "Memoirs of the Survey Map" (vol. ii, plate facing page 397), to be some four rock-cut *beers*, or ordinary underground cemented water-cisterns, connected with an ordinary aqueduct, which rises three-quarters of a mile west of the *Kurn*. All that I saw, and all that now exists in the desert north of *Tell Nimrim*, are three rows of bason-like, circular mounds, about 5 or 6 feet high and some 30 feet in diameter, resembling in shape the dens of ant-lions. The actual pits themselves, which once yawned deep and wide within these enclosures, are now in all instances filled up. In the longest row there are no less than 31 of these shallow basons. They are generally 30 feet apart, but in some instances 50 to 60. As seen at a distance, the three rows resemble a string of monster mole-hills, only placed at regular intervals.

My discovery consists in recognising these remains, when on a journey to the highlands of Moab in 1873, as the exact marks left by such a

water system as Mr. Simpson describes when in ruins, as I had an opportunity of seeing it in several places in the desert east of Damascus when travelling to Palmyra in 1872, and also in identifying them with the "slime" pits, or probably "marl clay," and possibly "cemented" pits, with which the Vale of Siddim was full, just north of the site now identified as that of the Cities of the Plain, and which dangerous network of pits stretching across the whole vale naturally completed the route of the retreating armies of the five kings, as described in Gen. xiv.

Mr. William Simpson is certainly right in supposing that the connecting channel of a *karaize* in Syria, as in Central Asia, is in every case at the bottom of the pits, and that under ordinary circumstances they are almost, if not quite, empty of water; and if I led Mr. Harper to understand anything else I was mistaken. But I think the words which Mr. Harper quotes as mine must be what he has gathered from my verbal description rather than any that I could have written. The "rain water from the hills," which is intended to be caught and conveyed on by the first pit, is not surface water, but that of a spring underground at the foot of the hills; and the object is not to keep water standing in the pits, but to pass it on by their connecting channel, or tunnel, through the gradually descending ground till it flows out at a point on a level with the surface, some half a mile to three miles away from the spot where the water is found at the bottom of the first pit. I specially referred Mr. Harper, when telling him about my discovery, to Dr. Porter for a full description of this system as now at work on the Plains of Damascus. As Mr. Simpson says, it is "to be hoped that some one will be able to tell us what the system is at that place," I will now give Dr. Porter's words in Mr. Murray's "Handbook for Travellers in Syria and Palestine," 1858, vol. ii, p. 497:—

"A mode of obtaining water for irrigation extensively employed over the Plain of Damascus is deserving of notice. A well is first sunk till water is found; then, following the slope of the plain, another is sunk at the distance of 50 or 60 yards, and the two are connected by a subterranean channel, with just enough of fall for the water to flow. A long line of wells is thus made and connected, and the stream of water obtained is at length on a level with the surface, and ready for use. The whole plain is filled with these singular aqueducts, some of them running for two or three miles underground. Where the water of one is diffusing life and verdure over the surface, another beneath is collecting a new supply, deriving it, too, in some measure from the surplus of the former which percolates through the soil. Many of them are now choked with rubbish, and no longer serviceable." Dr. Porter has also another allusion to this system of irrigation on page 540 in the same volume, and two in his "Five Years in Damascus," vol. i, pp. 159, 394, in the first of which (p. 159) he alludes to the circular bason-like mounds around the mouths of the pits. Readers of the *Quarterly*, who may be interested in the discovery *in situ* of the ruins of constructions mentioned in the Bible as existing nearly 4,000 years ago, may see the subject fully discussed in an article

entitled "The Cities of the Plain and the 'Slime Pits' of the Vale of Siddim," which I am contributing to the May number of the "Theological Monthly."

JAMES NEIL.

ERRATA.

1889, page 52, "Spring of the fig." *For* fig, *read* almond.
" " 207. *For* novel, *read* or Thrupp's.
" " 208. *For* Rabboth, *read* Rabbath.
" " 209. *For* "That the, *read* that "The.